DOCUMENT RESUME

ED 284 747 SE 048 292

AUTHOR Holtan, Boyd
TITLE Elementary Mathematics Mini-In-Services Institutes. Mathematics Higher Education Consortium. Education for Economic Security Act, Title II, Public Law 98-377. Report of Project.
SPONS AGENCY West Virginia Board of Regents, Charleston.
PUB DATE Jul 86
NOTE 103p.
PUB TYPE Reports - Descriptive (141) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *College Mathematics; College School Cooperation; *Course Content; Course Descriptions; Elementary Education; *Elementary School Mathematics; Higher Education; *Inservice Teacher Education; Mathematical Applications; Mathematical Enrichment; Mathematics Curriculum; Mathematics Education; *Mathematics Instruction; *Mathematics Teachers; Teacher Response
IDENTIFIERS *West Virginia

ABSTRACT

The consortium Mini-In-Service Mathematics Project consisted of teachers attending two three-hour graduate classes at each of seven sites in West Virginia. This document reports on the activities of the project and the results of a variety of evaluations done on and about the project. All participants completed a mathematics and a mathematics education class. Since the classes met concurrently, efforts were made to include similar topics and integrate the mathematics content and teaching methods in both classes. The report contains: (1) discussion of the organization of the project and the methods used to recruit participants; (2) description of the project program; (3) information about the participants; (4) descriptions of the activities designed to achieve quality control in the various training sites; (5) explanations and outcomes of various evaluation activities; (6) letters of support; and (7) a summary and comments made by the project coordinator. (TW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED284747

MATHEMATICS HIGHER EDUCATION CONSORTIUM

EDUCATION FOR ECONOMIC SECURITY ACT, TITLE II

PUBLIC LAW 98-377

REPORT OF PROJECT

ELEMENTARY MATHEMATICS MINI-IN-SERVICES INSTITUTES

WEST VIRGINIA UNIVERSITY
JULY 1986
BOYD HOLTAN
PROJECT COORDINATOR

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Boyd Holtan

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SE 049 372

BEST COPY AVAILABLE

MATHEMATICS HIGHER EDUCATION CONSORTIUM

EDUCATION FOR ECONOMIC SECURITY ACT, TITLE II

PUBLIC LAW 98-377

REPORT OF PROJECT

ELEMENTARY MATHEMATICS MINI-IN-SERVICES INSTITUTES

WEST VIRGINIA UNIVERSITY
JULY 1986
BOYD HOLTAN
PROJECT COORDINATOR

Mathematics Higher Education Consortium

Report of the
Elementary Mathematics Mini-In-Service Institutes

I. Introduction..... 2

II. Organization and Recruitment..... 4

III. Project Program..... 8

IV. Participant Information.....10

V. Quality Control Activities.....13
A. Planning Workshop
B. Coordinator Class Visitation

VI. Evaluation Activities.....14
A. Participant Survey of Mathematics Classes.....15
B. Participant Survey of Math Education Classes and Project.....30
C. Principal's Survey of Project.....44
D. County Office Supervisor or Administrator Survey of the Project.....50

VII. Letters of Support.....53

VIII. Summary and Coordinator's Comments.....54

IX. Appendixes.....56

MATHEMATICS HIGHER EDUCATION CONSORTIUM

Elementary Mathematic Mini-In-Service Institutes Project

Education for Economic Security Act, Title II

Public Law 98-377

I. Introduction

A proposal for a middle school mini-in-service mathematics institute was submitted by West Virginia University to the West Virginia Board of Regents for funding under Title II of P. L. 98-377, Education for Economic Security Act. The original proposal was for the mini-institutes to be conducted in ten sites across West Virginia by a consortium of higher education institution faculty during the fall semester of the 1985-86 academic year. The proposal was accepted, but budget reductions forced a revision of the project to seven sites in conjunction with the following state institutions to serve in their areas of the state:

West Liberty State College

West Virginia State College

Fairmont State College

Concord State College

Potomac State College

Marshall University (Two centers, one at Huntington and another at Logan.)

The Mini-Institutes consisted of two three-hour graduate credit level courses, one in mathematics and another in mathematics education that integrated mathematics and mathematics methods experiences for teachers of grades four to six. The courses were taught during the fall semester, 1985-86, by selected faculty from the site regions. Usually, the instructors were a mathematics and a mathematics education faculty person from the cooperating consortium institution.

Planning and a syllabus for the classes were completed during an instructor workshop at Flatwoods, West Virginia, on August 23 and 24, 1985. During the semester, the project coordinator visited all except two of the classes.

Each Mini-Institute enrolled from 11 to 25 teachers from the

surrounding areas. All participants received a waiver of tuition from the Board of Regents for the 6 semester hours of graduate credit from the graduate institution of their choice, College of Graduate Studies, Marshall University, or West Virginia University.

County school units were encouraged to use some of their money under P.L.98-377 to support their teacher participants in the form of textbooks, travel, or stipends. A letter was sent to all superintendents in the state in July requesting that they support the project.(See Appendix A for a copy of the letter.) Unfortunately, the funding did not arrive in the counties until after the semester was over, so county contributions were minimal. Another problem was that the original letter stated an incorrect Public Law number for the program.

For each of the site centers a coordinator was appointed to assist in setting up the classes, arranging for instructors, recruiting participants, contacting local schools for participant financial support under P.L. 98-377, and serving as a contact person with the consortium project coordinator at West Virginia University. The center coordinators also attended a session of the planning workshop at Flatwoods on August 24, 1985, and an evaluation wrap-up session at Oak Hill on March 8,1986.

The amount of the grant from the Board of Regents for the project was $50,000 with no provisions for overhead payments to the institutions. Each of the seven consortium site higher education institutions received $6,100 to conduct the program in the center. Funds were expended as follows:

Two Instructor Salaries and Fringe Benefits	$3,000
Work-shop $150/day-4 days-2 instructors	600
Instructional Materials	1,000
Work-shop Conference Expenses (Travel, etc.)	750
Consortium Center Coordinator	750
TOTAL	$6,100

The remaining $7,300 was budgeted to West Virginia University for program coordination, class visitation and travel, project evaluation and final report.

West Virginia University served as the coordinator of the Consortium. The Board of Regents was the fiscal agency and distributed the funds to each of the participating institutions.

II. Organization and Recruitment

Following notification of the successful project proposal, participating state higher education institutions were immediately contacted to identify a coordinator at each site and class instructors. The following project staff was instrumental in carrying out the project as a cooperative consortium of higher education institutions:

Site: West Liberty State College
Coordinator:(Joint) Jeri Dailey & C.N. Baker
Mathematics Instructor: Charles N. Baker(WLSC)
Math Education Instructor: Jeri Dailey (WLSC)

Site: West Virginia State College
Coordinator: E. V. Ianello
Mathematics Instructor: E. V. Ianello (WVSC)
Mathematics Education Instructor: Ray Dockery (COGS)

Site: Fairmont State College
Coordinator: William Rouff
Mathematics Instructor: Carol Henry
Math Education Instructor: Elizabeth Frye (FSC)

Site: Concord State College
Coordinator: Dan Krider
Mathematics Instructor: Jack Johnson (CSC)
Math Education Instructor: Mary Edna Beckett (CSC)

Site: Potomac State College
Coordinator: Robert W. Naylor
Mathematics Instructor: Gary Seldomridge (PSC)
Math Education Instructor: Carl Shore (Formerly Frostberg State College)

Site: Marshall University
Coordinator: Carl Johnson
Mathematics Instructor: Steve Hatfield (MU)
Math Education Instructor: Ralph Hall (MU)

Site: Logan
Coordinator: Carl Johnson
Mathematics Instructor: Karen Mitchell (MU)
Math Education Instructor: Carl Johnson (MU)

Graduate Credit Institution Coordinators

College of Graduate Studies: Ray Dockery
Marshall University: Jack Jarvis
West Virginia University: Boyd Holtan

Project Coordinator: Boyd Holtan (WVU)

Recruitment of teachers for participation in the project was conducted primarily by the coordinators in each of the sites. Each coordinator developed county contact strategies appropriate to the region. For example, the Marshall University Coordinator produced a brochure of information for the teachers in the Huntington and Logan areas. (See Appendix B)

The information questionnaire which the participants completed at one of the first classes in the semester included a section to evaluate the various recruitment strategies that were attempted. The following table indicates the frequencies of responses to the questions:

1. From what sources did you learn about the Consortium Mini-Institute?

2. From what source did you receive information first?

3. From what source did you receive information second?

4. What source was most helpful in helping you decide to apply?

INFORMATION SOURCES	From what sources did you learn about the Consortium Mini-Institute?	From what source did you receive information first?	From what source did you receive information second?	What source was most influential in helping you to decide to apply?
NEWSPAPER ARTICLE	9	5	5	1
PRINCIPAL TOLD ME	19	14	10	7
PRINCIPAL'S BULLETIN BOARD	15	8	6	2
LETTER FROM SITE COORDINATOR	48	35	12	37
COUNTY INSTRUCTIONAL SUPERVISOR TOLD ME	34	21	17	24
COUNTY IN-SERVICE MEETING ANNOUNCEMENT	4	1	2	2
INSTITUTE TEACHER CONTACTED ME	12	5	10	11
ANOTHER TEACHER TOLD ME	23	14	6	16
OTHER	6	6	2	6

The frequencies indicate that a letter from a site coordinator and information from the county supervisor were the earliest and most effective sources for project recruitment. Other teachers and Mini-Institute instructor contacts were also helpful. Since the recruitment had to be completed in a very short period of time, an organized newspaper program was not instituted. Principals, county in-service meeting announcements, and bulletin boards were not effective for this particular program.

A sample application form was developed by the project coordinator and distributed to each of the sites. (Appendix C) Coordinators could revise or adapt the application forms for their own use. Based on information from the submitted application forms, site coordinators obtained relevant information to select class participants.

The Site Coordinator was responsible for the selection of the class participants. The Site Coordinators were encouraged to contact principals and other county administrators for information to assist in selection. The application form contained information which the coordinator used in making selection decisions. The sites varied considerably in the make-up of the classes as a couple of the site coordinators were concerned that there would not be sufficient teachers in grades 4-6 available, and opened the classes to higher grade levels and in some cases high school teachers. Generally, the text and content material was not as appropriate and more adaptation was needed in the sites which included the higher grade level teachers.

III. Project Program

The Consortium Mini-In-Service Mathematics Project program consisted of two three-semester hour graduate classes at each of seven sites in West Virginia. All participants completed both classes, a mathematics class and a mathematics education class. Since the classes met concurrently, efforts were made to include similar topics and integrate the mathematics content and teaching methods in both classes. At one center, the mathematics and mathematics education instructors co-taught the classes.

The courses were each a full semester in length, meeting once a week for about 2 1/2 hours. Schedules were determined at each site by the site coordinators. Some classes met on two consecutive evenings while others met two evenings seperated by one or two days. One site scheduled one class on Saturday morning and the other on Monday late afternoon which seemed to be one of the more successful scheduling arrangements.

Graduate credit was available from any one of the three graduate institutions in West Virginia as follows:

Mathematics Course: 3 Semester Hours
- College of Graduate Studies-
  - Math 502-Elementary Mathematics
- Marshall University-
  - MTH 583-Special Topics-Mathematics for Middle School Teachers
- West Virginia University-
  - Math 231-Introduction to Mathematics for Elementary Teachers

Mathematics Education Course: 3 Semester Hours
- College of Graduate Studies-
  - Education 550-Math for Elementary and Middle School Teachers
- Marshall University-
  - C&I 583-Special Topics Mathematics Education: Activities for Middle School teachers
- West Virginia University-
  - C&I 395-Practicum in Teaching Middle School Mathematics

A basic textbook was used which had sections for mathematics and mathematics education with the intention that the two instructors would coordinate the instruction using the same textbook. Instructors were also encouraged to supplement the textbook to make the course appropriate for the needs of that class. The text was:

TODAYS MATHEMATICS, FIFTH EDITION (Paper) by James W. Heddens, Science Research Associates, Inc. Chicago, 1984.

Since problem solving is considered an area of needed assistance in

mathematics teaching, the mathematics education classes used copies of PROBLEM SOLVING EXPERIENCES, GRADE 6, by Randall Charles, Robert (Pat) Mason, and Geneva Gallagher, Addison Wesley Publishing Company, Reading, Mass. 1985.

At the Consortium Class Planning meeting at Flatwoods, WV, on August 23 and 24, 1985, the following topics were selected to be included in the class instruction:

Number Theory
Fractions and Fraction Operations
Decimals
Geometry
Measurement
Statistics, Probability, and Graphing
Problem Solving

Instructors at the different class sites integrated these topics into mathematics and mathematics methods instruction appropriate for their classes. The project coordinator visited the fourteen classes and observed the instruction.

Class instructors were encouraged to use manipulative material to demonstrate their use in teaching mathematical concepts. Teacher participants were also encouraged to share manipulatives that they have found to be helpful in instruction. Each class site was budgeted $1000 for instructional materials. However, the use of these materials was varied among the seven sites due to financial problems in the site ordering procedures. A couple of sites did not order the materials until the classes were nearly ended, and the materials arrived too late to be used effectively. Other sites obtained the instructional materials and used the materials effectively.

All of the classes completed the work, final exams, and course and project evaluations with course grades submitted by the instructors to the appropriate graduate institutions. The course and project evaluations will be reported in detail later in this report.

IV. Participant Information

Registration in the classes at each of the sites was as follows:

SITE	COGS	WVU	MARSHALL	TOTAL
Potomac State College	18	2	1	21
West Liberty College	1	15	0	16
Fairmont State College	19	6	0	25
West Virginia State C.	19	0	0	19
Concord State College	11	0	0	11
Marshall University	0	0	23	23
Logan Site (Marshall)	0	0	14	14
TOTAL	68	23	38	129

The 129 participants were allowed to choose the graduate institution from which they desired to receive credit, but the choice was heavily influenced by participant costs. Although the student tuition was waived by the Board of Regents, an off campus fee of $80 was required by West Virginia University and a $20 fee was required by Marshall University. The project budget did not include these fees for the students. Since the College of Graduate Studies has no off campus fees, a greater number of participants chose COGS rather than the nearest institution geographically. It had been hoped that the county units would absorb these fees, but since they did not receive their funds until the semester was ended, only a few participants were supported in this way.

Each participant was asked to complete an information sheet during one of the early classes of the project. The survey (See Appendix D) was designed to gather demographic information about the classes and participants. The following are summaries of this information. Since this was done at the beginning of the project, it may contain a few responses from students who didn't complete the project classes. There were also a couple who did not complete the survey.

Twenty-four counties employed teachers who participated in the project. The following table reports the counties and number of teachers.

Number of Teachers in Project	County	Number of Teachers in Project	County
5	Brooke	4	Mason
10	Cabell	5	Mercer
1	Clay	10	Mineral
1	Fayette	4	Mingo
2	Grant	9	Ohio
4	Greenbrier	1	Putnam
4	Hampshire	1	Roane
3	Harrison	2	Summers
12	Kanawha	5	Taylor
5	Lincoln	3	Tucker
8	Logan	7	Wayne
17	Mar..n		
2	Marshall		

The survey indicated 21 or 16% of the teachers were males and 108 or 84% were females.

The level of employment of the participants was:

16 (12%) Fourth Grade Teacher;
24 (19%) Fifth Grade Teacher;
34 (26%) Sixth Grade Teacher;
26 (20%) Seventh Grade Teacher.

"Other" was a response of 48 teachers. Some indicated more than one level, for example 7,8 and 9. The statements listed following "Other" were:

Number	Level
3	First Grade
4	Second Grade
2	Third Grade
8	Eighth Grade
1	Ninth Grade
1	K-6
1	K-8
1	1-8
3	8th & 9th
1	Math 1st - 4th
1	Intermediate Math
3	Gifted
1	Coordinator
1	Substitute
1	Special Education
1	Assistant Principal
1	8-12
1	Media Specialist

Of the 121 teachers who listed their birth year, the following age groups were determined:

Age-Years	Number	% of 121 Reporting
20-24	5	4%
25-29	28	23%
30-34	35	39%
35-39	22	18%
40-44	17	14%
45-49	6	5%
50-54	4	3%
55-59	3	2%
60-64	1	1%
	121	

Over ½ or 52% of the participants were in the age group 25-34. This indicates that the participants are teachers who will be able to use skills and information from the project for some years in their teaching career.

All of the participants have completed degrees with the highest degree earned as follows:

55	(44%)	Bachelors
67	(54%)	Masters
2	(2%)	Doctorate

The high proportion of teachers who already hold masters degrees probably indicates a high proportion of teachers that are interested in obtaining better classroom skills and information rather than just credit for a degree program.

An item on the information survey asked participants to indicate the total number of years of teaching experience. The following reports the 128 responses.

Teaching Experience	Number of Participants
0-4 years	22 (17%)
5-9 years	48 (38%)
10-14 years	33 (26%)
15-19 years	19 (15%)
20-24 years	6 (4%)
Total	128

From the table, it appears that the teaching experience varied widely among the participants. The project served relatively new teachers (17%) as well as the veterans. However, 81% of the participants had less than 15 years of teaching experience, so it could be expected that there is time for teachers to implement knowledge from the project in their classes for a number of years before retirement.

V. Quality Control Activities

Project activities were designed to provide a high quality project, and were followed by evaluation surveys to check the project effectiveness.

Planning Workshop

On August 23 and 23, all project instructors attended a planning workshop at Flatwoods, WV. During the workshop, the text material was organized and a course syllabus was developed. Instructors at each site, math and math ed, worked together to start the coordination of content and method. The project site coordinators also met at Flatwoods on the morning of August 23. The coordinators planned recruitment strategies and discussed appropriate ways to administer the project in the sites.

Coordinator Class Visitation

The project coordinator traveled to each of the project class sites to visit the classes and talk with the participants. This served as a way to assist the instructors to have high quality activities and to identify problems which could improve the program. All of the classes except two were visited during the semester.

The following visitation schedule was completed:

Saturday, October 19, Fairmont (Math)
Monday, October 21, W. V. State (Math)
Thursday, October 24, Potomac State, (Math Ed)
Thursday, October 31, West Liberty (Unified Math and Math Ed)
Monday, November 4, Logan Center (Math)
Tuesday, November 5, Concord (Math)
Thursday, November 7, W.V.State (Math Ed)
Monday, November 18, Fairmont (Math Ed)
Wednesday, November 20, Concord (Math Ed)
Monday, November 25, Marshall (Math)
Tuesday, November 26, Potomac State (Math)

VI. Evaluation Activities

At the beginning of the project classes, each participant completed an information sheet which provided demographic information about the participants in the project.(Appendix D) The demographic data of participants was summarized in an earlier section of this report. At the end of the project each participant completed questionnaires concerning the mathematics class, the mathematics education class, and the project itself. The participants were also asked to list the names of their principal and county supervisor. After the classes were completed, each principal the teacher listed was sent a questionnaire for opinions about the project. A similar questionnaire was sent to each county supervisor that had been listed by participants. The results of these evaluation activities will also be summarized in this report.

Project Site Coordinators and Instructors met with the Project Coordinator at Oak Hill, WV on March 8. At this meeting, the staff shared feedback they had received about the project and indicated problems that they had during the mini-institute classes. The meeting was in conjunction with the State West Virginia Council of Teachers of Mathematics meeting, so the staff also was able to participate in professional meeting sessions at Oak Hill.

A. Participant Survey of Mathematics Classes

At the conclusion of each of the mini-institute mathematics classes, the teacher participants were asked to complete an evaluation form to assess their opinions about the project. The questionnaire was completed by 113 of the participants in six of the project classes. The evaluation forms from one of the classes was lost in the mail and is not available. (Appendix E is a copy of the evaluation form.) The following is a tabulation and report of the pooled results of the six classes. Since this is a report of the total project, results for the individual sites are not included. These were shared with the coordinator and instructors for each site at the wrap-up and evaluation meeting at Oak Hill on March 8, 1986. This data is available from the project director if necessary.

The first eight items from the mathematics class questionnaire completed by the project participants are presented below with the frequency and per-cent for each of the responses. The per-cent is based on the 113 questionnaires completed.

Items 9 through 12 on the questionnaire allow open ended responses. These responses are copied directly from each of the evaluation forms for each item.

1. How well do you understand the mathematics content which has been presented this term?
   - 76 (67.3%) I understand clearly most of the content;
   - 31 (27.4%) some of the content;
   - 5 (4.4%) little or none of the content.
   - 1 (.88%) omit.

2. Has the pace of the mathematics instructor been satisfactory this term?
   - 11 (9.7%) very fast;
   - 34 (30.1%) little too fast;
   - 59 (52.2%) just right;
   - 3 (2.7%) little too slow;
   - 0 (0%) very slow.
   - 6 (5.3%) omit.

3. Have you felt free to ask questions in the mathematics class?
   - 94 (83.2%) no hesitance at all;
   - 15 (13.3%) some hesitance;
   - 4 (3.5%) great hesitance.
   - 0 (0%) omit.

4. How significant do you consider the mathematics content for you?
   - 50 (44.3%) very worthwhile;
   - 50 (44.3%) of some value;

12 (10.6%) little or no value.
1 (.88%) omit.

5. To what extent has the mathematics content been "old stuff" and, consequently of little value to you?
8 (7.1%) very repetitious;
77 (68.1%) some repetition;
27 (23.9%) mostly new content.
1 (.88%) omit.

6. In the mathematics class did you have difficulty in knowing what to read or study, or what was expected of you?
89 (78.7%) I had no trouble in knowing what to do;
21 (18.6%) some trouble;
1 (.88%) I was usually in the dark about what to read or do.
2 (1.8%) omit.

7. In the mathematics class, was the proportion of lecture and discussion questions out of balance?
22 (19.5%) too much lecture;
85 (75.2%) balanced about right;
3 (2.7%) too much discussion-question.
3 (2.7%) omit.

8. Has your attitude and interest toward mathematics been changed in any way this term?
42 (37.2%) Yes, increased;
25 (22.1%) a bit greater;
38 (33.6%) about the same;
7 (6.2%) decreased some;
1 (.88%) decreased.
2 (1.8%) omit.

9. If your attitude and interest toward mathematics has changed, what do you think is the primary reason?

I was already interested, but have become fascinated by methods and ideas presented.
(4) N/A.
Attitude about the same.
No-College professors need to come out of their IVORY TOWER and into the real world.
Greater interest.
I have an increased interest due to new material administered.
The primary reason for increased interest is being reminded of many topics I hadn't been exposed to in a long while. I enjoyed hearing about topics and problems expected of students at college level.

The class was too hard. Too fast paced. I did not feel comfortable asking questions.

The class was too advanced for our children.
Too much pressure on tests-never knew what to expect.
I liked this professor's approach very much. I do feel better equiped to teach math.
Being exposed to a variety of ways to teach concepts has helped to stimulate my interest in math.
I have been exposed to many different manipulatives. Ways of getting ideas across to students. I have been re-introduced to many mathematical concepts.
That children should not spend everyday doing, math, math, math. That they can also learn from manipulating objects/discovery thru objects and manipulation.
The general attitude of the instructors toward math was genuine and challenging. Encouraged an in-depth look at what we are really doing in our own classes.
Because I understand the basic concepts better.
The methods and use of various manipulatives.

Learning more theory.
I know how much knowledge of math I am really lacking.
We have had math concepts I had not thought about for a very long time. I will not forget it. Now I want to learn more!
I understand more of the "how comes" instead of just automatically doing. Ex. Why do you inverse fractions when dividing fractions?
There wasn't enough examples & problems for us to work. (Homework) One example and discussion & on to something else just doesn't stick.
I understand the concepts better and feel more confident trying to work through the problems.

Very good (well prepared) instructor.
For once, I got to see how mathematicians think and how they go about solving problems. I gained a healthier respect for their mathematical discipline and precision.
It's motivating to be with others who enjoy mathematics.
Being involved with the class and others in the field has kept Math much more in the foreground than it might have been. Lecture and discussion have often times made me more aware of my own students and how their attitudes toward math are formed and affected by teachers and their methods.
Interest is increased due to seeing a variety of ways of approaching a problem; the discussions held were interesting and informative; the instructors enthusiasm for the subject was infectious.
Being in a "batter's" slump, after 10 years of teaching, it was a helpful awakening to some new ideas.
My attitude and interest has improved/increased mainly from being able to discuss techniques and methods which other teachers use, and learning what other teachers feel is important, etc.
I was already extremely interested in studying mathematics. I want to

improve my knowledge of math because I think this will greatly benefit me and my students.
A little better understanding of math theory.
Improvement of skills; nonthreatening atmosphere.
The activities, lecture, and discussion served well in the capacity of remediation which being an elementary teacher I despirately needed!
I find myself even more fascinated with math and excited about the "new" developments.
No. As a math educator I have always enjoyed exchanging ideas and sharing problems, etc.

Given the opportunity to discuss and work the equations as a group has enhanced my understanding of how to attack teaching math.
New ideas for presentation - varied & interesting approaches, etc.
Seeing the importance of explaining and then letting students show they understand through their questioning.
Discovery of new approaches increased interest & motivation.
The instructor was interesting and enthusiastic. She made us realize how important a good background for each student, no matter how young, was.
More understanding allows self confidence and increases interest.
Interesting material, good instructor.
I feel more comfortable with the content as a result of this class.
Some of the concepts were new and interesting; some were repetitious but approached by a new method.
I feel more secure now in teaching what we are expected to teach from text-plus I have added more!
When I have a good math teacher, my interest always increases; I really want to know my math material as well as I can to be an effective math teacher.
This class and the instructor, her explanations, examples & classroom atmosphere.
This class has reviewed my enthusiasm for developing new ways to present material to my class not straight out of the basal-but my own ideas!
The instructor made the material interesting and easy to understand. She related problems and misconceptions to the material and clarified these misunderstandings well.
I found new ways to do my teaching-that is easier and more fun!
A better understanding of the concepts involved in the math content. Some concepts are finally learned now, and I won't forget them.
Yes, I feel a little bit better about the content in middle school math. Also, I think I can explain some areas of math content with more ease to my students.
I have always enjoyed mathematics and have taught mathematics for many years but do not have an endorsement. I feel a little more confident to continue working on such an endorsement.
I have become more confident because of going over content and become familiar with terms and competence in working problems.

The instructor is such an excellent mathematician that he has made me want to learn more.
My anxiety about math has lessoned. This course was very good, in fact, excellent for High School Teachers, but not Elementary Teachers. I learned some things but I doubt I'll ever use these skills at my level.
A better understanding of the content.
I was introduced to some new methods with regard to presenting concepts to students.
More aware of what is going on and more comfortable with my knowledge and understanding.
Being in the class.
I understand a bit better, less afraid.
Teachers experiencing some doubts about teaching math-we offer/accept suggestions and ideas to/from others.
I realize that other teachers have more trouble with math than I. Also, new ways to approach different topics. I appreciate having a better background, also.
The class has made more aware of the reasoning/theory behind what I have been teaching.
The instructor, is the most enthusiastic instructor I have ever had. You can't get bored with him. He "rubs off" and makes me enthusiastic. I loved the class.
Good ideas.
I feel more comfortable doing mathematical problems, but I don't have much interest in taking any more math classes.
Having new ways, how to work math problems.
I have learned new concepts feel better prepared to assist 4th-6th students. I know much more background material than before.
None.
Pressure, loads of notes, I have a 30 minute planning period, a family, and outside interest. I did not have the time to do well.
Presentation of the material in a new way. Tricks of the trade-so to speak.

10. Describe the aspects of the work during the mathematics class which you felt were most valuable.

Explanations were thorough and gone over until we understood, handouts were good.
Having to think again was probably the most valuable.
Understanding the reasoning behind math problems.
Have a better understanding of why certain operations are performed at certain times.
We received a great deal of excellent materials which can be used in our individual classes.
The handouts and papers given in connection with each unit. The extra effort given by the professor to meet our needs.
Computer lab, written practice work, handouts.
Reinforce math skills and acquaintance with new skills.
Computer lab, written work each week for practice, notes from teacher so we could focus on listening and working instead of writing, wealth of materials available to us.
Logic and problem solving.
Work with addition, subtraction, multiplication, & division (theory).
The indepth study especially in number theory, logic, statistics, and measurement. Now I understand "Why" better.
Materials for usage in classroom.
Averaging, geometry.
The teaching of basic math problems.
The take home activities.
Teaching the students; i.e., how to teach them.
The review of skills I had not taught.
In depth explanation of concepts used in El./Middle school.

Class discussion.
Proving the answers to problems, better understanding of metrics.
Working problems at end of chapter and then given an opportunity to ask questions if one didn't understand!
Was glad that +,-,X,& division were skipped over & went right into "higher level" math.
Her examples and willingness to answer all questions.
Theory behind basic problems that students must do.
Weekly quizes.
Learning the reasons behind the formulas.
Presenting one concept in various ways; different approaches to the same idea.
Work on primes-fractions, geo.
Quizzes, homework, good lectures, and good teacher attitude toward students who don't quite understand material.
The methods & concrete representations of objectives. The explanations of why we do operations a certain way.
The math content was most valuable-but the methods were the most fun.
When problem was broken down to show why we do certain computations.

How to explain concepts-such as why you flip & multiply a division problem in fractions.
Use of illustrations used to clarify text.
The work with computers was new for most teachers, therefore valuable!
The concrete visualization of space figures was most valuable to me.
What we learned as teachers, we were taught how to convey to the students in simpler & more understanding terms.
Doing the homework exercises gave a better understanding.
Geometry.
Doing the practice problems at end of each chapter. Keeping up by studying for the quizzes.

The extension and enrichment session were most valuable.
The class discussions that covered our reading assignment were the most valuable part.
It was a good review of material I had in college and it was more in depth. I also now paid closer attention to topics I teach because I know, what I need to know. It reminded me what's important to stress.
Discussion of the text was very helpful, but I think being put in the position of being a student really helped me develop sympathy for my students.
Problem solving situations.
Little "Gimmicks" were very transferable to the students, yet stressed the "math" content, not just a gimmick. The use of identifying proofs, and showing how to prove something.
Learning new methods/shortcuts to do arithmatic, algebra, word problems, etc.
The ability to ask questions freely. The response & ideas for the classmates.
The instructor expresses his significant knowledge of the subject to us in a humorous way. I enjoyed following his presentations.
The instructor was well prepared & made interesting presentations. The material which was not beyond my scope was beneficial. I have used some things in my classroom and feel I have been able to explain concepts better to my students.
Review and reteaching of concepts that I had not been using or do not teach what were basic math concepts.
Discussion of the chapters, working through problems which presented difficulty.
The book work and our discussions of it were the most valuable. These only lasted a few weeks.
(2) The most valuable part was the discussion about the chapter questions.
Sharing of ideas and solutions to various problems.
Discussion of practice exercises.
Reviewing terms that I had in high school (30 years ago). Most of the math I've had since high school was very limited in scope.
The instructor presented a "fine" class. He brought in much material that gave the class a good tone or direction.
The enrichment activities (discussions) Canton's Theories & supplemental challenge problems.

Some of the information was material I had heard 20-25 years previously and it helped to refresh, it would have helped to pursue it farther in class for a deeper understanding.

The materials which focused on different methods of presenting a concept to the students.
The work done with both positive and negative numbers.
Our instructor going into step by step details of how problems were solved.
Going back and refeshing my memory on how to work out these things.
None.
Theory behind some of the "accepted" procedures in math computation.
The instructor readily explained any problems needed.
Applications of the theories.
Make me aware of math in general-recalling.
The text was very helpful in definitions and activities.
Theory of application and new content.
Review of basic math material.

Materials & hand-outs worthwhile.
The Curisenaire Rods.
Work with probability in lower middle school grades.
Using manipulatives to teach with.
The wealth of materials we received was the most valuable aspect of this class.
Work with problem solving, probability, and use of the computer.
Computer activities, lecture, some classroom activities.
I felt the manipulatives were the most rewarding; then, being introduced to various games to reinforce concepts.
(2) Many activities (in groups) where we worked with fractions.
Lectures were begun at a level in which we could adapt easily for our own classrooms, presented in interesting fashion.
Integrating the concepts of the methods; the patience of the instructor.
Methods for the use of manipulatives.

I liked lectures and presentation of new ways and methods.
Patterns and ideas in number theory. Which would cause interest in children.
It gave teachers from a variety of grade levels and backgrounds, the opportunity to see the scope of the content for middle school grades.
I had never studied logic, truth tables, learning from other teachers.
Extention of problem solving.
I felt the discussion periods were valuable.
Going into more detail.
Geometry teaching.
Algebraic work above my teaching job was most valuable.
Foundations of mathematical structure was stressed-makes it easier to teach.
Review for test.
Learned new formula for S.A., review for tests.
Review for exam.

The different explanations from other students.
Concepts and ideas added in the lecture that were not in the text. ex. irrational and complex numbers.
None.

11. Describe the aspects of the work during the mathematics class which you felt were least valuable.

(2) None
Review of math concepts.
A lot of repetition of what we already knew.
I felt that the material covered was too elementary.
(5) Truth tables & logic.
Truth tables to prove math problems seemed least valuable.
Material has been repetitious.
Reviewing the basic operations of whole numbers, fractions, and decimals.
Taught the same material I teach everyday.
Least valuable to me were aspects covering basic operations with fractions, decimals, etc. I found this necessary.

Tests & concepts that are taught on a much to complex level for an elementary school; concepts-not practical or useable for average or below average math students.
Too much review of content in upper middle school (and beyond) which was not relevant to teaching in 4th & 5th grade.
Homework.
(2) The overwhelming amount of busywork we were required to do.
Too much time on general knowledge (whole numbers).
All units had value but some got too in depth, leaving me feeling more insecure about my understanding of them.
Completing page after page of repetitious work-felt that much of it was busy work; hours of outside repetitious homework.
There were a few times when we had to get so much seatwork done that we rushed through the work without fully understanding what I was doing. This bothered me!
Probability and Geometry. We spent too much time on these two areas.
Too much repetition in assignments.
Some of the math concepts; needed lower level concepts to use with my students.
Too fast for a person with little experience in geometry; much to fast in geometry-probability.

Some of the number theory and geometry concepts were too advanced for my present teaching level but would be useful to know.
None-it was a good review.
Modular arithmetic.
Not enough application practice.
Some problems were discussed too deeply-when an explanation was all that was needed.
Too much material was covered for such a short period of time. Of course,

I figure most of the students had a better background than I did.
For my grade level I think q rods were the least valuable.

None.
Some of the higher level math problems, which were intended to challenge the math majors in the class, were interesting to me, an elementary non-math major, far beyond my ability to figure out independently.
We spent quite a bit of time doing enrichment work which was a little beyond me. Even though it was interesting it didn't seem to pertain to my needs.
Some of the material was way over my head. I enjoyed it but did not find it valuable.
Most of the content which conformed strictly to the textbook. It was the extension of those ideas which were most useful.
No comment. Not applicable-great for reviewing.
Sometimes the math content seemed trivial, but for many in the class it was not, so it had to be covered for their benefit. This actually did not "bother" me since I enjoyed giving hints & learning from different approaches.
Some of the discussion questions in the book.
I did not think reading that math book was worthwhile.
A lot of the material was "over my head".
The high level enrichment periods that were over my head.
Class time spent on problems far above the Middle School capability.
The times we went into great detail about extremely complex items were not valuable to me. This was well over half of the class time.
Computer programming.
I feel that much of the time was wasted on things of interest to the secondary math teachers. We are not expected to be tested on this material; and the class was for middle school teachers. Why then, was it discussed for over one-half of the class time?
As a math major, the work was non-existent.
Higher level math situations when I have a limited background.
Most of the class was very much more knowledgeable about mathematics than me and I was left behind in many of the discussions.
I did not care for the $22.95 book. It overly flogged the dying horse. It belabored issues far beyond their worth. However, chapter and material was good-it had many good calculator/computer activities.
The actual text work. Though not fault of the instructor, a text was chosen for people needing training in middle school math. That content I already knew.
Too much time spent discussing advanced ideas with some math majors while those of us (minority) with very little math background were lost.

No comment!
(5) None.
Explanations at a time of testing.
All material covered was very relevant to my teaching.
I needed to practice as we went along because once I left there was no source for help in things not understood.

This is difficult as I felt I received value from all aspects.
Repetition of concepts previously covered.
Really none-needed every list of instructions & information I could get.
None, the whole class was fantastic, well, to be truthful, tests were really not that great!
There was nothing having least value!! I really didn't enjoy the metric measurement as much but it still had value.
I felt that personal problems or opinions of class members were out of place in this class and distracted from flow of information.
I really didn't need too much concept development for number theory-I wish we had more time for geometry. This was a need area for me.
All was valuable.
I felt all aspects were valuable.

(2) Truth tables.
Too much, too fast. Unable to go back to the classroom and use it.
I felt there was too much emphasis on detailed instruction and theory in areas I will probably not use on my level of teaching.
Only thing that we needed was more class time to do examples of the work.
Too much material to learn that I do not use in the classroom.
Accuracy & precision with measurement.
I do not use truth tables.
Geometry.
Logic problems.
Some of the run-offs were not used; perhaps can use with students later.
A lot of classwork.
The theory. I need to know how to work the problem not why.
Probability, statistics; not applicable to 6th grade.

12. Make a general evaluation of your experiences in the mathematics class which would be constructively useful for making this course more valuable.

More weekly exercises.
Do not have 4th through 8th together in methods class. The sharing class was super. This instructor was super, he was just too super for me.
More practice on assigned work that was covered. (for points, etc.)
Overall my experiences in this class have been positive. I feel the course would be better if it were made more applicable to a smaller range of grade levels.
This class content was twice as much as time allotted. He covered all of it which was good but we needed twice the time not to feel swallowed by the material.
I think exposure to all of the material is worthwhile, however, learning it for testing purposes when it's not taught makes the class too difficult. Also, having 2 classes at once while working all day is a killer.
Very beneficial.
I enjoyed this class very much. I feel that I learned quite a bit and so did the other teachers in my class. I appreciated the handouts which can

be used with my students.
More actual computations with each lesson (homework to reinforce concepts taught each week).
In all my scholastic experiences I have never learned more or enjoyed learning any more than I have in this class. Don't change the instructor but for the average middle school teacher slow him down just a bit.
The instructor knows his mathematics content extremely well. He is the best instructor (content) that I have had. He is very enthusiastic in his teaching.
I enjoyed talking with other teachers about their experiences. The instructor, was very energetic.
A very interesting class where we learned a lot about math.
I feel more take home practice would help in learning concepts, concepts were well-constructed, but difficult for me.
Too much classwork-too many classnotes.
More in time class on math problems to be taught.
Excellent content instructions but more correlation to methodology is in order. Perhaps both courses should be taught by one professor.

More time during class to go over instruction Methodology.
Very interesting and worthwhile. Really on level for Grade 6.
Instructor needed to feel more sure of herself. She knew what she was doing but there was a hesistancy.
Would like to see a little more "teacher-proven effective" ideas. More time to discuss & share in class. Instructors did a great job.
Better organization for presentation of material to class.
Having the same person teaching both classes.
I felt it was super-I only wish we could have covered more than we did.
I felt this class to be valuable in expanding concepts and experiences with elementary content.
Gives you confidence-feel more secure-relaxed when teaching math. When you enjoy teaching math-children appear to enjoy doing math with you.
The instructor is a very good mathematics teacher. She has an easy style and is very organized. I felt relaxed.
The use of more materials to provide more concrete representation.
Have a sequal to this class. We just began to touch on topics for lower intermediate math-we should do more with pre-algebra, etc.
It helped me to break down a problem step by step to help understand why it works with short cuts. Ex. Why use recipicals in division.
More problem solving manipulatives, concrete examples.
The class should be available for primary & kindergarten teachers so that students get started right from the beginning. If necessary, high school students would benefit if their teachers had this opportunity too!
The course was very useful for me in all aspects. I would keep it just as it was-content and methods. Personally, I could have used more geometry but other people had other needs. I felt all needs were equally balanced.
I have learned a great deal in regards to problem solving and different ways to teach new content and some materials that are useful.
More methods, more sharing.
I am not a math teacher but work with gifted children. Many of our problem

solving activities are "math". I think this course has been very valuable to me because I haven't had math for so many years. It's good for all to review.

Well done (wouldn't change a thing).
Have the course outline set up ahead of time. Specify exactly who the math course is "aimed at"-tell which teachers. Limit the range of mathematical proficiency next time. Provide more class time discussing problems we as teachers have presenting the concepts and workable solutions we might have arrived at.
I would have liked to have spent a little more time in class working through the material in the book and a little more work with problem solving. Also, about the mini-institute in general-I would have liked to have seen a bit more correlation between the two classes so that we would have been on the same subjects the same week and so we wouldn't have done a few of the things in both classes.
Define the course so that it attracted a more homogenous group.
The format was great as presented. More of the same.
The Review of Mathematics I feel would be useful to any teacher involved with 5-8 math.
The class was titled as a class for middle school teachers. The enrollment was elementary thru high school teachers. Maybe the class would be broken into segments for each level.
Get the word out to what level is going to be covered. This would be great for 4-7th grade teachers.
I would like to see more situations presented that would show how mathematics can be applied to the situations on a 5-8 grade level.
Seperate those who are math majors from those who are not.
Be very aware of the level of the course attracts and have professor teach thoroughly to all levels.
Since it was designed for people who needed experience in Middle School math it should be limited to those students not to math majors teaching on high school level. Spectrum was too broad to spend time on only middle school math.
Even though the teacher tried to consider the varied ability levels represented, I believe he spent too much time on complex areas that had little or no value to my level of students.
Giving ways to improve teaching-i.e.-fractions.
I think the range of the grades taught should be smaller. Also, more time should be spent on going over the chapter in class and perhaps using hands-on materials in the class.
Spend more time presenting solutions to those with less experience. Maybe, small group work time instead of whole class discussion would have let more questions been asked.
The remediation of this material reinforced many old forgotten learning experiences.
Class should be divided more evenly. Many of the math students taught high school math and were math majors. Some of us were elementary teachers with general knowledge but not to the extent of others. Class would have been more effective for all with more compatable grouping.

Different text, same instructor-he should be given free rein in future.
There was a need for better communication as, I, a math major was not the intended audience. I would add that the instructor did a commendable job of adding to the intended content with supplemental related materials which gave the course something for everyone.
Separate the math majors from those who had very little background either two seperate classes or alternate weeks.

Lower some of the concept level to include materials actually covered in the middle school and spend more time in developing methodology for teaching certain concepts.
None.
I enjoyed the math course very much. I feel more elementary teachers could obtain greater confidence if they would take the course. I think there might be a little more of problem solving time and a decrease in time spent on theory.
Waste of time - Examples. given on handouts, homework assignment=10 problems a week.
More theory, less learning centers. I feel we should be willing to use what we have been taught.
I just feel I have a better overall workable knowledge of math.
It was a very valuable experience but more preparation in class dealing with test problems.
Pretest for all would be good.
The tension of being tested was just overwhelming to me. Had it not been for this I feel I could probably have learned more-been more relaxed. I don't think we, as busy teachers, should have to prove ourselves. The class was certainly worth while. I'm leaving with a great awareness of mathematical concept-eager to learn more! Thanks!
More problem working by the students for practice of the mechanical part of the problem. If I taught a higher level I would find the practice very beneficial.
More practice work & problems to see if you understand.

Professors who are teaching you math concepts should know what is really in elementary math books & not teach impractical theories, that as a classroom teacher, I will never use; The class has to be made more practical.
Work-load of homework must be reevaluated; too much for people who work all day.
Tell the truth about the class at the start; what we were told about the class & what we actually did were entirely different.
Use the questionaire given at the beginning of class to determine what to teach rather than just teaching the chapters from the book.
Less group work & more teaching or showing us how to teach certain concepts.
Learned some new ideas; we were asked what we wanted help with-then were told this is what we had to be taught.
Course was very helpful! I suggest staying more in tune with what were actually teaching and what is going on in the classrooms. There should be much more opportunity for feedback throughout the course. Communication

was not always as it should be! (True for both courses).
In general, the course was very valuable. The instructors were very good & made a wide variety of materials available to us. The only problem encountered during the course was the overflow of outside homework assignments, projects, take-home tests, etc. As an elementary school teacher, I find myself with approx. 1-2 hours of work to complete every evening. This added to the hours of homework from this class made life very difficult at times. I realize that homework is an important part of the learning process, however, other-things have to be taken into consideration & assignments should be adjusted accordingly.
In general this was a positive learning experience. It was a very hectic pace because of other obligations in teaching and family. For me, once a week would have been better. Possibly, mathematics could be taught one semester and methods the next semester.
If you spend less time on Geometry and probability I think you would have a good class.
Would have preferred more real instruction in the areas not stressed in many schools (such as geometry); had loads of material, but not much teaching. Too much discovery method.
Gear down some of the concepts to the level that is being taught.
Spend more time with method-concept-manipulative. Too much-too fast.
I was lost most of the time-much of the material seemed to be aimed at levels higher than where I teach. Also my poor math background of 25 years ago left me feeling very inadequate. The pace was too fast for me to learn & remember. I have a great deal of math anexity & it certainly has not lessened, and this was my main reason for taking the class.

I would like very much to take more courses from this instructor.
Divide into elementary & secondary groups.
It was suppose to be grades 4-8. Nothing was presented on grades 4-7.
More teaching techniques for specific grade level.
I enjoyed the class.
I would like more creative ideas or teaching strategies for my math class.
Non-consecutive nights, otherwise okay.
Okay the way it is.
The review of the many different aspects of explanation.
Divide into elementary groups & junior high groups.
I have enjoyed this class and feel that omitting some basics that all teachers should already be comfortable which might improve it.

B. Participant Survey of Mathematics Education Classes

An evaluation form was completed by the participants at the end of the mathematics education class to survey their opinion as to the quality of the mathematics education class and the project as a whole. (Appendix F is a copy of the evaluation form.) The questionnaire was completed by 108 participants at six of the sites who completed the class. Evaluation forms for one of the classes were not available. The following is a report of the pooled results of the six classes. Results for the individual sites are available from the project director and were shared with the site coordinators and instructors at the wrap-up and evaluation meeting at Oak Hill on March 8, 1986.

The first eight items of the mathematics education questionnaire completed by the project participants are presented below with frequencies and percents of the 108 responses.

Items 9 through 12 which allowed open ended responses are copied directly from the participants' surveys.

1. How well do you understand the mathematics education content which has been presented this term?

89	(82.4%)	I understand clearly most of the content;
17	(15.7%)	some of the content;
0	(0%)	little or none of the content;
2	(1.9%)	omit.

2. Has the pace of the mathematics education instructor been satisfactory this term?

11	(10.2%)	very fast;
12	(11.1%)	little too fast;
74	(68.5%)	just right;
6	(5.6%)	little too slow;
1	(.9%)	very slow;
4	(3.7%)	omit.

3. Have you felt free to ask questions in the mathematics education class?

84	(77.8%)	No hesitance at all;
19	(17.6%)	some hesitance;
5	(4.6%)	great hesitance;
0	(0%)	omit.

4. How significant do you consider the mathematics education content for you?

65	(60.2%)	Very worthwhile;
38	(35.2%)	of some value;
4	(3.7%)	little or no value;
1	(.9%)	omit.

5. To what extent has the mathematics education content been "old stuff" and consequently of little value to you?

19	(17.6%)	very repetitious;
55	(50.9%)	some repetition;
34	(31.5%)	mostly new content;
0	(0%)	omit.

6. In the mathematics education class, did you have difficulty in knowing what to read or study, or what was expected of you?

75	(69.4%)	I had no trouble in knowing what to do;
28	(25.9%)	some trouble;
4	(3.7%)	I has usually in the dark about what to read or do;
1	(.9%)	omit.

7. In the mathematics education class, was the proportion of lecture and discussion-questions out of balance?

7	(6.5%)	Too much lecture;
78	(72.2%)	balanced about right;
15	(13.9%)	too much discussion-question;
7	(6.5%)	omit.

8. Has your attitude and interest toward teaching mathematics been changed in any way this term?

47	(43.5%)	Yes, increased;
29	(26.9%)	a bit greater;
27	(25.0%)	about the same;
4	(3.7%)	decreated some;
0	(0%)	no decrease;
1	(.9%)	omit.

9. If your attitude and interest in mathematics education has changed, what do you think is the primary reason?

The review of some mathematics in class has helped, and also the ideas of other teachers has helped.
I enjoy math and would like to teach it full time because I could understand most of the information taught this time.
Quality of teaching.
(3) It has not changed.
At first I didn't feel the training I was getting in the classes would

help me in my field (remedial math) but now I am glad to have had the classes to see the more advanced math my students need to be working toward.
I have had little change in attitude.
Interest in current research in how achievement can be increased.
My enthusiasm for mathematics and teaching is always renewed by sharing ideas with other teachers. I think the primary reason for the valuableness of this course was the opportunity to share ideas with other teachers and the professor.
Make and take aid in teaching math. I got many new ideas.
I think college professors need to come out of the IVORY TOWER to the real world.
I appreciate being introduced to new sources for hands-on activities.
More interest.
It has helped provide me with some activities to help increase student interest and enjoyment of mathematics while still learning.

Exposure.
I enjoyed working with computers and seeing the types of materials available.
Additional information available and rekindled fondness of math.
I've learned more about the use of computers.
Using the computer helped to create more interest.
Math Education class has made me want to learn more.
I understand how computers, hand held calculators, and other materials can be used in teaching math.
I really enjoyed the computer work done in the class.
I have become more interested in computers and their use from activities done in class.

Listening to other teachers discuss their techniques and the problems of their students has made me understand & appreciate math ed more.
Skills used by other teachers (how they can be incorporated in my class).
It is the first class I have ever taken with math majors. Their ideas and methods were very interesting.
My interest has been sparked because of the ideas other teachers brought in to share.
Reinforcement of remediated skills.
I was motivated to try new methods & materials and to always look for new ideas. I feel a real challenge to become a better math teacher.
I needed some new ideas and an interchange with other math teachers.
I was impressed by the enthusiasm shown by my classmates.
I felt competent.

The introduction and practical use of manipulatives in so many areas.
The attitude of the instructors toward mathematics was genuine and challenging. Looked at the subject through their eyes. Able to use West Liberty materials in own classroom.

Variety of methods available in the teaching of mathematics.
I feel excited about implementing some of the new methods I've learned.
Love all of the new resources!
I have been exposed to many different ways of introducing and reinforcing mathematical concepts. This class has broadened my background which will carry over into the classroom.
We were shown many activities to use in our classroom. Manipulatives children need to manipulate objects to better understand math.
I will never hand my students a stack of dittos and pay "do these"! I will use a lot more manipulatives.
I won't give students as many ditto sheets in one sitting.
Too many dittos in geometry & negative attitude of teacher. Having so much extra work outside class including these evaluations!
It wasn't very helpful. I hoped for more hands-on (practical) information for helping remedials.
I see a need to use more manipulatives in early school years.
Too much material was presented in too short a time period with excessive use of worksheets and the so-called "discovery" method.
Stayed the same!
I picked up some new ideas for alternative methods.

I have had "good" math instructors in the last few math classes I have taken.
I now understand more about the types of concepts taught in middle school. I also realize how important concrete concept development is for children.
New ideas developed in class.
A better understanding of mechanics.
I found a greater range of manipulative high interest activities to utilize.
Activities geared for students.
I feel more confident about my ability to teach a class.
Methods in teaching the different content.
Motivation.
Familiarity with subject matter.
I didn't think math would be fun to teach. I now think I might enjoy teaching math.
Yes, more interest because of the problem solving.
My interest has increased.
Doing projects-problem solving exercises.
Interesting new ideas to use in the classroom; new methods of presenting material.
I feel more secure now in working with middle school math.
The number of projects presented suitable for grade level which involve student involvement.
I feel much more comfortable with the math content and have collected many new ideas.
I learned some better methods for teaching things I've done for years.
No, I have always liked math.

I have taught math 15 of the 17 years that I have taught. However, I do not have a degree or specialization in this area in fear of higher math. Now I do feel that I might be able to handle the courses for Middle and Junior High.
I am teaching math for the first time this year so I took this class for my renewal. I am very glad I did, I'm much more confident & sure of myself.
Better understanding of scope & sequence of intermediate math.
I have learned so many "fun" activities. I had previously thought of math as sitting and doing "purple worksheets".
I have not had math since high school and I feel more confident.

I feel more relaxed with my teaching of math. I am using more manipulatives and this makes math more interesting for the students and myself. The sharing of ideas and methods.
I believe it is due to a new awareness generated by the sharing of ideas.
I feel more comfortable in teaching math and my expectations of students has changed; I'm more concerned with understanding and process.
The class has made me more aware of my attitude in Math & the way I project it to my students.
I learned about many concepts never having learned before. I also am learning not to have math phobia; in fact, now that I have learned some, I would like to learn more.
I have learned that there are several approaches and many aids to use when teaching children.
I am more interested in teaching manipulatives and with activities.
Brought more attention to the subject.
Talking to other teachers-getting good ideas.
Learning new games and teaching techniques.
None.
The instructor is a very enthusiastic and knowledgeable instructor, and he is infectious. He makes me enthusiastic.
Influx of new ideas as presented by fellow students & professors.

10. Describe the aspects of the work during the mathematics education class which you felt were most valuable.

Being introduced to so many games in the many subject areas of math.
Sharing of materials, activity/games, and ideas.
Peer group discussions and new concepts & methods/materials were very helpful.
Preparation of a teaching unit.
Writing my unit and thinking of new & different ways to present it with hands on material.
Presentation of games.
New concepts or ways of explaining why we learned and teach some concepts as we do reasoning behind them. Also, other teachers' materials and approaches were invaluable.
I learned from interacting with other students (teachers of children) in my class. They gave me many ideas and encouragement.
Sharing materials.
Sharing with fellow students information; also reading problems.
Different approaches to teaching; saw different types of math materials; all the sharing of handouts.
Sharing of ideas.
Sharing ideas with each other.
None.
Now I know "why" something works because of the indepth study. The instructor showed us some very simple ways to present some concepts to our students which made it easy for them to grasp.
Trading of ideas & new activities generated by students.

Learning "Why" we do things such as invert & multiply to divide fractions; use rations & proportions to covert metric units;etc.
Sharing problem solving approaches; sharing lesson ideas; compiling a resource of materials for the strands.
(3) workshop. the problem solving activities.
Doing activities that children will be expected to do.
Journal articles.
On hand experiences.
Doing special projects.
Laboratory activities is correlation to chapter.
Projects.
Discussing different projects and activities.
Developing activities to use in the classroom-sharing activities/ideas.
Making projects & teaching concepts.
Sharing ideas used by others; emphasis of hands-on materials.
Actual hands on activities-teachers taking turns teaching.
Working on activities.
The journal articles were valuable because I could pick out and read things that interested me. Also learning others ideas was great.
The sharing of materials for teaching ideas was most valuable. Problem solving particularly!
Activities.

All material was valuable-projects and shared activities.
The methods were extremely valuable. The sharing of ideas and materials of classmates.
The methods developed for teaching division of fractions.
Making activities which I can use in my classroom. Also, the "sharing" of activities was great!
Content was very important. Making the activities very valuable in teaching.

The methods and manipulatives (mostly).
Times when we received direct instruction in the use of various manipulatives (when to use, how to use, why to use, etc). Wealth of handouts to use at will.
All the different teaching manipulatives worksheets, etc. that we are exposed to!
Down to earth methods for introducing concepts-mira math, cuisenire rods, fraction bars and others; working on the computer helped take away some of the fears, also the resources!
Learning about all the various manipulatives. Most of the time, concepts can be introduced in many different ways.
Fractions: I learned new ideas towards introducing fractions.
Learning new manipulatives; working integration of math concepts and math educat cn.
Exposure to manipulative materials and how to use mira, cuisenaire rods, geoboards, discs, etc. Different strategies for teaching a concept.
The wealth of materials we received was the most valuable aspect of this class.
Using manipulatives to teach certain concepts.
Exposure to fraction manipulatives & games.
Learning and sharing new games when they were appropriate for my teaching level, which was rare.
Idea's in teaching concepts.
Learning use of some manipulatives. A wealth of materials & handouts-wow!
Problem solving techniques and presentations/projects by each class member.
Interaction between us all.
Individual presentations.
Sharing projects and ideas with other teachers.
The most useful part of the class was the time we spent working on the process problems and their solutions, and the time we spent on presentations for each other.
Sharing of ideas of presentations.
Thought-process problems.
The sharing of ideas we brought in on the various topics and shared in small groups.
Problem solving.
The workshops.
The "hands-on" activities were valuable in that they gave me ideas on new approaches to the subject matter.

I enjoyed working with an "expert" who is knowledgeable in content & presentation.

(5)Computer work.
Computers-Typing in programs and learning operation of computer.
Division theory-computer work.
The activities conducted gave me fresh ideas in some areas of teaching math to my students.
The games and activities were valuable.
Activities/computer.
Work with the microcomputer.
The most valuable aspects of this class were the new concepts & ideas that will further help me to help my students understand better.

The in-service aspect of working with the other secondary teachers.
I enjoyed making games and projects for our children to use. Learning of the current mathematical research has helped also.
General discussion of every topic by a knowledgeable professor.
(3) Ideas for various activities.
Sharing class activities.
The games we learned from other teachers.
I felt role playing and sharing of materials was valuable. Some of the activities had been put to use in my classroom.
I have already used some of the "role play" activities with my students.
I enjoyed making these activities for my classes.
Sharing games and activities which would create more classroom interest.
Making and demonstrating manipulatives for the teaching of math at middle school level was the most valuable aspect of this course. Other classes I had along this line were too elementary for the level I teach, but these ideas were on level.
Makes & takes.
(2) Making games.
Math activities.
(2) Sharing games & activities with other teachers.
The sharing of a variety of activities on a variety of topics to help increase student interest in mathematics.
The different activities that can be applied to math.

11. Describe the aspects of the work during the mathematics education class which you felt were least valuable.

The mathematic text was elementary to a secondary teacher.
Trying to find research material in the library-the library staff assumed we knew what we were doing-but they tried.
(3) Oral & written research reports.
Searching for research.
Some of the research reports did not seem to apply to our situations.
I felt the research papers were of some value, but the time could have been spent on more useful material.

The research papers were of least value to me. I would have enjoyed the research if the requirement had been less. Quantity does not always mean quality.
Reading mathematics education research articles and making reports on them was the least valuable aspect of this class. I could see the value of studying research trends or summaries-but most of what I spent a great deal of time studying in detail, had only minor implication/application to my teaching.
Research (paper).
The reports.
(2) Research critiques-all it was-was busy work!
Sharing research articles.
The giving of oral research reports. One of the most interest, or informative or unusual reports from each student would have been sufficient. Writing the reports would have forced us to do reading in our field.

Watching some other students teach.
Felt most areas covered were valuable.
Some was to low of a level.
Personally I enjoyed this class and felt it was very valuable and very helpful.
(2) None really!
Some student projects didn't apply to my professional situation.
Some of the presentations did not fit my class level.
The least valuable aspects were those few things that I had already been exposed to.

None
The least useful aspect of the math education class was the "new" math information for algorithms.
Can't think of anything.
The time spent making the activity file. The best source of information seemed to be other teachers, (who had tried & tested the ideas they shared) not the books I used to look up information which I had never tried.
Elementary methods at primary grades level.
Braids & some of the old stuff that we looked at.
The text was irrelevant to the course.
The instructor did very well for us.

Too much concentration on higher-level concepts.
Too much time in group work without benefit of real instruction. (Although, you could ask questions at any time). Repetition of assignment seemed too time consuming, cover too many problems in too short a time for proper digestion.
Repetitious assignments.
Where we did group work that became repetitious-too much of one thing. For example, doing whole labs when a few key pages would've been

adequate.
There were 2 times when there was too much repetitious work. I rushed through without really understanding. This bothered me!
Geometry, Probability. I think we spent too much time working on these two areas. I would much rather have spent time on multiplication, division, more problem solving and saved Geometry and probability for last.
Dittos...Dittos...Dittos...
The overwhelming amount of busy work we were required to do.
Homework.
Ten thousand dittos-mostly in geometry-including the labs.
Too much busy work and not much choice in changing things to help our individual classes.
Working hundreds of problems.
The endless hours spent doing endless examples of concepts that were never taught but left to be "discovered"!
Too many worksheets; too much paperwork & homework; too much outside classwork.
Much of the material presented was far too difficult for my level students.

I felt that math methods part was good but at times we got off on tangents that weren't very applicable to current content. (Not instructor's fault).
Wish we could have moved faster with number theory and spent more time in geometry.
(3) Lecture.
Reading journals.
No comment.
Presentation of problems.
Assuming most people knew the material in advance.
"Tests" on subject matter.
Repetion of concepts previously covered.
Repetition of some material as math content.
Having problem solving activities presented in class.
(4) None!
All activities were valuable.
There was absolutely nothing done that wasn't of great value.

All of the experiences during this class were valuable for me. My class and teaching methods are more exciting for myself and the students.
I valued least the math units. Some of the units were good, but most teachers rely on text book & curriculum guides, which are standard procedures.
Presentation of units.
The "abstract" areas with regard to actually why a problem works are of little use to me as a classroom teacher other than for my own knowledge.
Carrying in materials & games, I would rather have written a brief description.
The sharing of so many materials which were "store-bought."

It was all of benefit to me.
I gain from all new ideas. I don't always use them but they still enhance my continual development.
Units done and presented by class.
Doing a specific unit & presenting it to the class.
To much sharing not enough in put from teacher.
Presenting unit in class.
All.
The geometry unit was just review for me since I don't use anything very sophisticated with my students.
Unit presentations.

12. Make a general evaluation of your experiences in the mathematics education class which would be constructively useful for making this course more valuable.

At times the class was not interesting as other, but I think this is to be expected. The sharing of materials and the unit presentations were so valuable that the other things are so insignificent. After all, we all were teaching each day, we were tired at times. But for me these classes were excellent and I'm grateful for the opportunity to have had these experiences.
I believe more hands on experiences would be helpful. More teacher directed examples.
Perhaps a bit more instructor input of good teaching practices. The class was very student centered which makes me feel I'm learning from peers rather than experts. This has pros & cons, one positive aspect being that we shared true experiences rather than IVORY TOWER material.
The carry over from my own class in elem. school to the class was the most beneficial aspect to me.
More take home assignments in content would be helpful. More specificity as to the teaching skills-what was wanted by professor. More suggestions as to student evaluation in math.
I could use more on implementation with children of the age level that I work with.
I am more enthusiastic regarding mathematics.
More information from instructor; less repetition from earlier classes.
More hands on practice with various math materials; make some various math materials for actual use in class.
New methods introduce my teacher; ways of dealing with group sizes. Ways of dealing with ability levels.
More concepts from the teacher (on how to teach math).
Not organized.
The instructor was very knowledgeable and enthusiastic. He gave us dozens of ideas to use in our clcassrooms.
Less text; more substance!!

Methods & math content need to be covered simultaneously; chapters covered more evenly. Too much time spent on first few "easy chapters";

rushed through last chapters "harder" but more interesting.
Please repeat it for others and add a workshop for geometry.
More workshop.
Be more specific as to requirements. They were not clear and changed all the time. Students were not treated with respect as adults.
No comment.
Instructor's attitude.
Fewer projects but more time to spend on individual problems.
Free exchange of "teacher-proven" ideas.
The class was very good, especially the lab where a lot of student activities were suggested.
I thought the workshop was more valuable than lecture. It may be better to have the same teacher do both sections.
This class was very useful. The most useful for me: keeping the handouts.
Sharing ideas was great!
Nice to have more time in actually trying out some of the games the students made.
Monday night is a hard night to listen.
We really needed tables to work from; usually there was a lot of juggling of materials!
Different ideas for teaching concepts; subtracting integer on a number line.
More materials.
The class was great-we developed lots of strategies for teaching and fine-tuned those that we have been using successfully.
I would like to do more on logic. We really did not get to that chapter.

The class was beneficial in almost every topic. The instructor presented a general overview of the topic to be covered & then a discussion period followed. Every topic was covered from many different areas.
Get the word out what class is for.
Survey of successful teaching techniques being used today.
Decide on the structure ahead of time and present it to the students; discuss more ideas about topics to present to students and methods to be used; discuss innovative methods in modern (today's) math instruction and how to implement these approaches in our classrooms.
I would have enjoyed sharing even more presentation ideas.
The class wasn't real well-organized. At first we had a specific topic picked for each class and on those nights everything was focused on that topic. As time went on though, I didn't always know what to expect because we did such a hodge-podge that we didn't seem to accomplish as much.
I thought the exchange of teaching ideas, in general, was very useful.
All were being employed successfully in the classroom.
Cut the older material and increase the "workshop"time.
It could have been improved were we to have had a more organized flow of activities. We then could have made more positive contributions to that week's activities.
I think I would like tc see some work on appropriate enrichment or

special interest topics.

No final.
I enjoyed working with the computers but would have liked to have more information on programming (writing own).
More interaction with classmates to the material taught and approaches.
I enjoyed using the computer because I had no previous experience with its use. I found out there are computer games in almost all subject areas that can be used for student's individual study or for long practice.
The discussion, activities and programs done on the computer; gave me more ideas of how to widen my limited teaching ability and do more things that will interest my students. I've really enjoyed this class. Thanks for making it worthwhile!
Very good, encouraging on my math skills.
Since computers are becoming a big issue in our society, I feel this has been a most beneficial course; also, the activities we have participated in can benefit a practicing teacher.
A little more structured.

I believe we should have a form with a clearer outline of what was expected. i.e.-order of items preferred by professor-even perhaps a form as to authors names-last name, (material found in form book)-Professor was patient but student's like to know & please not frustrate a professor-we were all so tired and worked so very hard-but did we work hard enought? Arriving to class exhausted is very trying-we work all day, go home, cater to husband and children and then try to satisfy the professor-one student was so tired and exhausted she went to sleep-all of this so we could be better teachers-in a job we can't be fired from-in reality all of us were in reality special people-and if there be justice all should get an A. God knows we tried!!!
(2) Two written reports would be sufficient, one oral report would be sufficient.
Delete extraneous research reports-2 written reports and 1 oral report.
Although I learned from the games and research reports my fellow teachers presented, I would have liked to have had more input from the knowledge of the instructor on more specific methods of instruction.
Divide into 2 groups (elementary and secondary).
Learning about different approaches to teaching math concepts and grade levels were helpful.
I enjoyed the class for the most part, but found the requirements a little hard to meet since we had two night classes at one time. I felt like the quality of the work done was not really considered-original ideas or materials, hand-made, which took considerable time were counted equally as those zeroxed from a book. Finding research articles enough was also a problem.
We did alot of busy work.
Instead of doing research articles and reports, if different techniques or strategies and activities for teaching the same concept had been

presented, I feel this would have been more beneficial.
Critiques of research articles are unnecessary.
The class was beneficial in that I gathered many ideas for games and activities I can use in my classroom. We also learned what researchers are studying at the present time.
Generally this class was helpful, enjoyable and worthwhile. Most of the time that you get teachers with common interests together to share experiences and ideas, you come away with something worthwhile. Not everything is of value but enough ideas come out of it for most participating people to get something.

If group work is necessary, have instructors or class members guide through lab-style work at comfortable pace. Stress quality more than quantity. Have less outside class assignments.
The course was valuable. Instructors were excellent. Too much outside work involved. This is one section of the course that definately needs some adjustment.
I feel I got an overload of math ideas, it reached a point of being too much to absorb and make useful. I suggest just teaching areas that we use at our grade level. My main concern about this course is that if 6 hours are offered in one term then classroom teachers need to work in class but not big assignments at home. We can't teach effectively without something suffering. As you know, elementary teachers already take work home every night!
In general, this was a pleasant, positive learning experience; however, it was a very hectic pace with obligations in teaching and at home.
Could this last 2 semesters and meet only once a week?
Spend more time in Multiplication and Division. I could have used methods for teaching these concepts to students, who have problems in these areas. (Problem solving also). Save geometry and probability for dead last.
Work more with manipulatives and various skills. There was too much repetition of the same skill.
Class should meet once per week. Hours were too long.
At the beginning of the semester we were asked to state what area of mathematics we most wanted to learn to teach better. I do not feel this class was designed to meet our needs. In the area of Geometry there was very little directed teaching. Instead we were given an abundance of labs and expected to discover on our own. I was more confused at the end of the unit than at the beginning. Most of the materials and ideas we covered are far above my students' abilities. On the positive note, I did benfit from the use of manipulatives. I have already used some of the ideas presented. The lecture was in just the right amount but there was too much discovery method used.
Tell the truth. Tell how work is really involved.
Teach more methods to teach material, gear class to meet the needs of the students-as described by students.
Cut the content, cut 90% of the homework "busy" work, make sure the participant receives useful games and related activity ideas on their teaching level.

C. Principal's Survey of Project

As a part of the information form, each participant listed his/her principal's name and school address. After the course was completed, a questionnaire was developed to assess the opinions of the principals on the quality of the project. (See Appendix G for a copy) The questionnaire was sent to 90 principals and returned completed by 64 of them for a 71% return. The cover letter listed the names of the participants who had named them as their principal. The following is a summary of the principals' responses with the items pooled from the different class sites.

The frequencies and percents reported are based on the 64 returned questionnaires. In some cases, a principal may have marked more than one category making a total for some categories greater than 100%.

1. What contact related to the Mathematics Mini-Institute Program have you had with your participant teachers this school year? (Choose the one most representative of your relationship.)

26 (41%) shared and discussed material and activities with the teachers;
24 (38%) briefly discussed the program with the teachers;
10 (16%) aware of the program, but have not had contact with the teachers;
8 (13%) no contact.

2. Based upon the information about the Mathematics Mini-Institute that has reached you, indicate by a check in each row the amount of assistance you believe the program has been to your teachers in each of the following areas: (Totals will not be 100% since not all 64 respondents marked each row.)

Mini-Institute Program Assistance to Participating Teachers

	None or No Contact	Some	a good amount	Much	Very Much
Mathematics content knowledge	6 9%	14 22%	14 22%	16 25%	10 16%
Methods of teaching mathematics	6 9%	11 17%	16 25%	17 27%	10 16%
Attitudes of teachers towards teaching mathematics	6 9%	14 22%	14 22%	13 20%	13 20%
Attitudes towards teaching children	6 9%	16 25%	15 23%	12 19%	11 17%
Skill in communicating with parents and principal about math teaching.	12 19%	16 25%	20 31%	7 11%	4 6%

3. Have the teachers in the Mathematics Mini-Institute shared information from the Institute with other teachers?

10 (16%) not that I know of;
48 (75%) informally in school;
1 (2%) school in-service session;
3 (5%) parent-teacher meetings;
4 (6%) other.

4. One of the intentions of the Mini-Institute Proposal was that the County Administration would be encouraged to use some of the ESS 98-377 grant money to support teachers in the Mini-Institute classes, for example by purchasing the textbooks, reimbursing travel, or by stipends.

a. Were you aware of the possibility of the County and Higher Education cooperative support of project participants?

35 (55%) yes;
28 (44%) no;
1 (2%) omit.

b. What financial support did your county contribute to your teacher Mini-Institute participants?

21 (33%) none;
12 (19%) purchased books;
2 (3%) reimbursed travel;
12 (19%) paid stipend;
15 (23%) other.(Describe)

Responses to "Other"

I believe a stipend was paid. I'm not sure of the amount.
Materials used in class.
Tuition.
Travel reimbursement was applied for but not recieved.
That money was used to provide C&I Math and Science class (tuition-free) to teachers within the county. These classes evolved from the enthusiasm generated by the Mini-Math Institute. More teachers in our county would like to participate in it.
Has not been paid at this point, but funds have been designated to cover some expenses.
Tuition & packet of games and information.
Off-campus fees.
Paid stipend of $100.00.
Tuition.
This is a private school. County Board of Education has promised to pay stipend, the teachers, however, have not recieved any reimbursement.
County has not yet reimbursed teacher for expenses

Paid stipend of $200.00.
Paid tuition.
Wayne county paid tuition for both classes.
Paid the amount of tuition for the class.
Reimbursed tuition ($20.00).
Paid off-campus fee.

5. Have you any general comments about the Consortium Mini-Institute? If so, please share them here.

Responses to "general comments."

Comments Question #5 (Principals)

It would be nice if those taking part would share some of their learning.

I was available to the staff of Harrison county. I was not aware of any on-going participation by the teachers to staff or administration. There appears to be a major break down in communication. If this program is worthwhile I would want this shared with the remainder of my staff.

As a participant, I thought the Mini-Institute was excellent.
I hope that other workshops are available for teachers in the future.

It would be very useful to repeat the mini-institute.

Next fall we plan on having an in-service for our school dealing with teaching methods in math and manipulatives that can be used in math. We feel that the Mini-Institute has helped our teachers and would like to see it available to more teachers in the future. Classes like these are needed to spark new ideas for teachers who have taught for several years and to help new teachers get started.

Excellent and very helpful. Teacher was very positive about the experience.

Praised highly by participants

The Mini-Institute was well recieved by the teachers. They had a very positive experience.

Teachers felt they needed more "hands-on" activities rather than theory.
Teachers were overwhelmed with the amount of calsswork and projects connected with the project. Classes in this area were taught concurrently rather than separately.

Push the idea of sharing information more.

I would like to see a similar course offered to provide the same help at the elementary level. The course was quite beneficial for middle school teachers.

I shared the information about the institute staff. The teacher that participated is an average classroom teacher. She complained several times about the instructor and his approach to teaching the class.
Through a classroom observation I was made aware of materials being used for math on this particular day was from the class. The teacher has not shared her experiences with me and as far as I know she has not shared her materials with the other teachers.
As a result of this inquiry I will ask Mrs. Conyers to share her experiences with the staff at our faculty meeting on Tuesday, February 18.

Excellent opportunity for skill improvement.

The math courses were helpful to Mrs. Kitching in learning new techniques to teach her math class.

I am pleased with my teacher's attitudes towards teaching math. The children show alot of interest in a variety of activities and teaching approaches.

The teacher is scheduled to conduct a staff meeting relating to the course. She and I shared information and ideas as the class progressed and tips and various information was shared with others on the staff.

Mrs. Watson has told me that her approach to teaching math has changed since attending the mini-institute. She now places more emphasis on problem-solving and uses games for drill work. The students are not as afraid of a story problem as they were at the beginning of the year and they enjoy the games so much that they forget that they're learning.
It was also her observation that many of the elementary teachers who attended the institute seemed rather dificient in knowledge and very unsure of themselves especially in the areas of number theory and problem solving. Mrs. Watson said she felt most of the participants benefited greatly from the classes and she felt that all elementary and middle childhood teachers should be encouraged to take the courses.

I had no knowledge whatsoever that this teacher was taking this course.

The idea of the institute was superb, however to expect a teacher to react with the expectations noted as choices in #3 is unrealistic. The people participated because they wished too. They will share with their peers but seldom others. I'm not at all aware of the slightest support provided in emphasis, money, extra travel or straight out grant. The institute should gear its efforts toward re-educating principals as well as teachers if you wish any significant affect. Don't teach me math teach me how to encourage good teaching in math, and how to teach children to love math.

The classes with teachers of many different math levels mixed together seemed to give my teacher a more understanding perspective of teaching math at its various school levels from elementary to higher education.

Mrs. Idleman says it would be good to have a class like math education class in other content areas.

Grant County did not come through with the stipend for the participating teacher.

It gave teachers an opportunity to review current trends in mathematics, it permitted social interaction and comparison of schools and teaching methods from different geographical regions.

It would be nice if more teachers could participate in a similar type class.

They will do workshop for math staff later in the year. They felt that the workshop did not present any new material. The elementary and middle school staffs should have been divided.

This seemed really helpful-and much needed experience for math teachers.

I knew nothing about your project and Mrs. Marcum was not sent by me. Sorry I couldn't be of more help.

It is good for classes like these to be given to provide the opportunity to teachers who might not otherwise get it.

I feel it helped a great deal in improving the outlook of mathematics of the teachers.

The Mini-Institute is a good program, it provides out teachers with up-to-date material and mehtods needed to teach mathematics.

The teacher was unaware that she should share any information with the principal.

The Mini-Institute was very valuable in that it provided the participants with knowledge of content, not just methods. In my opinion, too often, highte education for teachers leans too much toward methods of teaching and neglects content.

Mingo County should have paid travel and stipend for their teacher; because even though the class was paid for the two classes were very costly due to the amount of travel and also in terms of time.
Classes needed to be geared more to teaching of students instead of teaching teachers.

D. County Supervisor or Administrator Survey of the Project

Following the completion of the project classes, a survey was sent to the county school supervisor or administration who had been identified by each participant at the beginning of the semester. Thirty-four supervisors or administrators were sent a cover letter listing their teachers in the project and a survey to be returned. (See Appendix H for a copy of the letter and survey). Twenty-five or 73.5% of the surveys were returned completed. A summary of the item responses is reported below with all per-cent calculations based on the number returned (25). Some items were marked in more than one category so the totals may be more than 100% in some cases.

1. What contact with the Mathematics Mini-Institute Participants have you had this school year? (Choose the one most representative of your relationship.)

3 (12%) shared material and activities with the teachers;
16 (64%) briefly discussed the program with the teachers;
1 (4%) discussed the program only with the principals;
4 (16%) aware of the program, but have not had contact with the teachers;
2 (8%) no contact.

2. Based upon the information about the Mathematics Mini-Institute that has reached you, indicate by a check in each row the amount of assistance you believe the program has been to your teachers in each of the following areas:

	Mini-Institute Program Assistance to Participating Teachers					
	None	Some	a good amount	Much	Very Much	Omit
Mathematics content knowledge	0 0%	4 16%	9 36%	7 28%	4 16%	1 4%
Methods of teaching mathematics	0 0%	5 20%	8 32%	7 28%	4 16%	1 4%
Attitudes of teachers towards teaching mathematics	0 0%	6 24%	11 44%	3 12%	4 16%	1 4%
Attitudes towards teaching children	0 0%	6 24%	11 44%	3 12%	4 16%	1 4%
Skill in communicating with parents and principals about math teaching.	2 8%	12 48%	7 28%	1 4%	2 16%	1 4%

3. Have the teachers in the Mathematics Mini-Institute shared information from the Institute with other teachers?

4 (16%) not that I know of;
19 (76%) informally in school;
0 (0%) school in-service session;
0 (0%) parent-teachers meetings;
3 (12%) Other-(one marked two choices).

4. One of the intentions of the Mini-Institute Proposal was that the County Administration would be encouraged to use some of the ESS 98-377 grant money to support teachers in the Mini-Institute classes, for example by purchasing the textbooks, reimbursing travel, or by stipends.

a. Were you aware of the possibility of the County and Higher Education cooperative support of project participants?

19 (76%) yes;
5 (20%) no;
1 (4%) omit.

b. What financial support did your county contribute to your Mini-Institute participants?

14 (56%) none;
8 (32%) purchased books;
1 (4%) reimbursed travel;
2 (8%) paid stipend;
3 (12%) Other (Some may have marked more than one choice) (Describe).

Because of time factors we were not able to write our Title II project with teacher financial support.
We will be reimbursing teachers in the near future for all or part of their expenses. We will pay a minimum of tuition and book expenses.
Paid stipend of 50 dollars.
Tuition 200 dollars.
Paid 20 dollars per student to Marshall University for off campus fees.

5. Have you any general comments about the Consortium Mini-Institute? If so, please share them here.

The mini-institute provided a good opportunity for these teachers to improve knowledge and teaching skills.
More teachers might have participated if the workshop had been closer to Lewisburg.
If you or the teachers do not make us aware of the institute, it is kind of hard to support or promote it.
I would like to see the Mini-Institute repeated with a K-6 emphasis. I

feel we still need to try to help 5-6 teachers with methods and content, but we could also include K-4. Please repeat the institute(the instructors were great!)
Please call me, or I will talk with you at the WVCTM convention.
Very good on teaching techniques.
Recieved a lot of activities that can be used in the classroom. Both instructors were well prepared. Teachers enjoyed being with other math teachers and sharing information. The location of the class was good for our teachers.
Participant, under my direct supervision, is in a coordinators position-therefore many of these questions do not apply. Information recieved will assist in program development and in service.
All participants were very excited and enthusiastic about their newly acquired methods, attitudes and skills for teaching and interpreting math. The consensus is totally positive for the entire institute. (It is a rare accomplishment to find an entire group of teachers - so appreciative of newly acquired "tools" and such a high level of confidence in their efforts. You have taught what our math teachers need.
Communication between Marshall and Cabell administration before the workshop could have been improved. We would have preferred that the workshop be limited to intermediate teachers who did not have math certification.
If future programs of this type are planned we would like an invitation to participate. It would be helpful to have more lead-time to permit teacher & system planning. We had little time to recruit & evaluate candidates for the program.

VII. Letters of Support

When the project was proposed, support letters were requested from higher education institutions. In addition, as the project progressed, letters of support were obtained from a number of the county school systems which the project served. Cooperation of county units in the project is a requirement of the ESS Title II Program. Therefore, the letters were obtained from the county school units. These support letters are reproduced as Appendix I of this report.

VIII. Summary and Coordinator's Comments

The academic program of the consortium project was very successful. The cooperation of the state higher education institutions in the project produced an outstanding project for the 129 teachers who completed the courses. The work of all of the instructors was consistently of high quality. The cooperation of the graduate institutions in awarding graduate credit from the institution of student choice is probably a first. The staff of the state higher education institutions, I am sure, learned from the projet and will in the future, be better instructors in their own institutions as well as to be able to use instructional material from the project in their teacher education programs.

The evaluation of the classes and project by the students, principals and central office supervisors gave strong evidence that the program was of high quality and was meeting the needs of most of the participants. The open ended statements in the evaluations show a wide variety of things which teachers deemed as helpful to them.

One difficulty in the academic program for a couple of the classes was that the class did not consist primarily mathematics teachers of grades 4-6. Site coordinators were apprehensive during the short recruitment period that they would not be able to "fill" their classes and accepted teachers of higher grade levels and some high school teachers. This caused the text and syllabus material to be less appropriate for the class and made the teaching more difficult with the wide grade level distribution. Nevertheless, even in these classes, the evaluations indicated positive statements about the courses and instructors.

Although the academic portion of the project went well, the administration, particularly the funding activities, presented a number of difficult situations. In order to encourage a local cooperative effort, it was decided to channel the funds from the Board of Regents directly to each of the participants state higher education institutions at the sites rather than to fund them through a second level at WVU. Apparently, some of the state colleges had not had previous experiences processing this type of grant funds and had internal regulations which delayed financial support of the project activities. Some of the institutions were sufficiently flexible to use current funds to get the project activities underway with replacement from the B.O.R. at a later date. However, some of the institutions would commit no purchases or salaries until the money arrived from the Board of Regents. In some cases, the instructional materials for the classes was not ordered until the fall semester classes had ended and instructors didn't get paid until February.

Since the Board of Regents received its grant funds quarterly, a schedule was set up to remit funds to the cooperating site institutions. As the primary activities of this project were to take place during the fall semester, most of the funds were to be distributed during the first fiscal quarter, with all but 10% of the remainder distributed during the

second quarter. The final 10% was scheduled to be distributed at the end of the project with the final expenditure receipts. For those financial officers who will not allow the purchases until the money is received from the Board of Regents, I do not see how they will be able to obtain the last 10% of the funds!

One of the original intentions of the project was that the county school units with teachers participating in the project would use a portion of the funds allocated to them under the ESS Title II program to provide support for their teachers. It was intended that these monies might assist the teachers with the off-campus fees, books, travel, or stipends to supplement the project tuition waivers. A letter was sent to all superintendents in the state in July 1985, asking them to reserve a portion of their allotment for that purpose. (See Appendix A for a copy of the letter). One difficulty with the letter was that a typographical error on the letter indicated an incorrect Public Law number for the Act. This may have caused some confusion. However, it appears that most school administrators ignored the letter and in many cases, there was none or minimal support for the teacher participants. A further reason for the lack of county school support may be due to the late disbursement of the apportioned funds to the counties by the State Department of Education. These funds were not distributed until January 1986, which was after the project instruction semester was completed.

The original proposal provided a small budget for a coordinator at each of the consortium higher institution sites. They were instrumental in recruitment of participants and instructors. They also assisted in the local coordination and operation of the classes at the site. This was a very fortunate arrangement as it provided local supervision and assistance for a smooth operation. It also involved members of the higher education institutions and encouraged cooperation between them. The site coordinators played a large role in the success of the project and the inclusion of them in the budget was an excellent plan.

As a final summary, this project has provided in-service experiences for 129 West Virginia Mathematics teachers to improve their teaching. If we estimate 24 students in each class, these teachers will be teaching over 3000 young people in West Virginia. An additional benefit is the experiences and materials that the instructors will return to their own state college pre-service teacher education classes to improve the quality of the programs. The opportunity for the project instructors to work with practicing in-service teachers will provide a practical base for their later programs.

Finally, the project has provided an outstanding opportunity for Board of Regents higher education institution to work together on a common project. The contacts with the public schools in their surrounding areas is also a positive benefit.

IX. Appendixes

Appendix A - Letter to County School Superintendents, July 5, 1985.

Appendix B - Sample Recruitment Brochure - Marshall University Site.

Appendix C - Sample Participant Project Application Form.

Appendix D - Participant Information Form.

Appendix E - Participant Evaluation of Mathematics Class Form.

Appendix F - Participant Evaluation of Mathematics Education Class and Project Form.

Appendix G - Principals Evaluation Survey Form.

Appendix H - Supervisor or County Administrator Survey Form.

Appendix I - Project Support Letters.
1. Higher Education Institutions
2. County School Systems

West Virginia University

Division of Education
304 293-3441/3442

College of Human Resources and Education
602-604 Allen Hall
P.O. Box 6122
Morgantown, WV 26506-6122

July 5, 1985

MEMO to Selected County Superintendents of Schools

Dear Superintendent:

One of the programs approved under the Title II, Education for Economic Security Act is a consortium of higher education institutions in seven locations around the state. (The original proposal had 10 locations, however, budget considerations forced it to be reduced to seven).

Each Institute will provide six semester hours of graduate credit coursework for middle school mathematics teachers with tuition waived by the Board of Regents. Teachers may elect C.O.G.S., Marshall, or WVU as the credit granting institution. The two institute classes will be intigrated with three semester hours of mathematics and three semester hours of mathematics education methods. The courses will be taught during the fall semester 1985-86, for 20-24 teachers in each of the seven sites.

The county schools are asked to use a portion of their entitlement of the P.L. 78-399 money to support their teachers in the institute program.This could involve textbook purchases, stipends, travel allowances, or payment of extension class fees. Your P.L. 78-399 funds must be used in cooperation with higher education institutuion, and the institutes will provide that opportunity. Please contact the center coordinator in your region for planning your participation.

The following centers will be conducting the Institutes under the Higher Education Consortium. A preliminary contact person is listed where possible for you to contact in order to get underway:

Consortium Center	Tentative Contact Person
West Liberty State College	Geraldine Dailey
West Virginia State College	E.V. Ianello
Concord State College	Dan Krider
Fairmont State College	William Ruoff
Marshall University &	
Logan-Williamson Area	Jack Maynard
Potomac State College	Nancy Hockensmith

This is a unique opportunity for higher education institutuions to work together with public and private schools to assist teachers in West Virginia. The time is short, but we can do it!

Sincerely,

Boyd Holtan

Boyd Holtan, Director
Math Education Higher Ed. Consortium

BH:pca

It's the talk of the town!

MIDDLE SCHOOL

MATHEMATICS MINI-IN-SERVICE

INSTITUTES

Fall Semester, 1985

Logan High School - for middle school (grades 4-8) mathematics teachers in Lincoln, Logan, and Mingo counties (Classes will meet on Monday and Tuesday evenings.)

Marshall University - for middle school (grades 4-8) mathematics teachers in Cabell, Mason, and Wayne counties (Classes will meet on Monday and Tuesday evenings.)

Twenty-four participants at each site will receive tuition waivers for three semester hours of mathematics and three semester hours of mathematics education. Participating counties may also pay for one or more of the following: travel, textbooks, stipends, or extension class fees.

Professor Karen Mitchell and Dr. Carl S. Johnson will be the instructors at Logan High School and Dr. Steven Hatfield and Dr. Ralph Hall will be the instructors at Marshall University.

See Dr. Carl S. Johnson, 113 Jenkins Hall, Marshall University for an application form and additional information. (Phone: 696-3101)

PROJECT APPLICATION FORM
MIDDLE SCHOOL MATHEMATICS
MINI - INSTITUTE

APPLICANT INFORMATION SHEET
Application for Participation
in Project Supported by
Title II, Education for
Economic Security Act
(P.L. 98-377)
SEC. 207612 (C)

State Consortium Coordinator,
Boyd Holtan, West Virginia University

WV MATHEMATICS EDUCATION
CONSORTIUM OF HIGHER
EDUCATION INSTITUTIONS
Application made to Center
Coordinator:
Concord College Area-Dan Krider
Fairmont State Area-William Ruoff
Marshall Univ. Area-Jack Jarvis
Logan-Williamson Area-Jack Jarvis
Potmac State Area-Nancy Hockensmith
West Liberty Area-Jeraldine Dailey
WV State Area-I.V. Ianello

1. Name
   Mr. Mrs. Miss (or___) _____ _____ _____
   (encircle one) LAST FIRST MIDDLE
2. Residental
   Address _____ Phone: _____
   No. & Street
   _____ Zip Code: _____
   City & State
3. School where
   employed _____ Principal: _____
   _____ Phone: _____
   City & State
4. Mailing Address you wish used: (Item 2) __ , or (Item 3) __, Other (specify)
   _____
5. __ Male __ Female - Date of Birth __ __ 19___ Social
   (use numbers) mo. day yr. Security # _____ ____ _____
6. Level of
   Employment: __ Fourth Grade Teacher __Fifth Grade Teacher __ Sixth Grade Teacher
   __ Seventh Grade Teacher __ Other (state) _____
7. Expected Grade Level Responsibility 1985-86. _____
8. Number of years teaching experience: Elem._____ College _____ Secondary_____
9. Highest Degree earned:__ No degree, __ Bachelor's, __ Master's, __ Doctor's
10. Bachelor's Degree: _____ _____ _____
    Granting Institutuion Year Major
11. Highest Degree
    beyond Bachelor's: _____ _____ _____
    Granting Institution Year Major
12. a. Accepted in Graduate School at West Virginia University? __ Yes __ No
    Marshall University? __ Yes __ No
    College of Graduate Study? __ Yes __ No

FOR DIRECTOR"S USE ONLY(Participant Status: check only the most appropriate box)**

A. Participants
   __ Acceptance
   __ No support from project.

B. Non-Participants
   __ Not Selected
   __ Alternate

12.b. If accepted for the project, prefer graduate credit from which institution?
College of Graduate Studies __, Marshall University __, West Virginia Univ. __

13. Employment Record--List professional experience of the past 5 years in teaching and work related to teaching. (List in reverse chronological order giving present or last position first.) (Add separate sheet if necessary)

Dates	Employer	Nature of Activity
Current Position 19__ to 19__		

14. Check your certification status: __ No Certificate __ Temporary or emergency __ Permanent or fully accredited. Certification deficiency (if any) is in: __ Science or mathematics __ Education __ Both __ Other (specify)_____

15. College or University Education

Institution	School or department	years From--to--	Degree	Major Subject	Minor Subject (s)

16. List all projects (four weeks or more in length) specifically for mathematics teachers that you have attended. Included ALL Summer Institutes, In-Service and Academic Year Institutes, all Conferences, all Cooperative College-School Science projects, and all Research Participation projects, in which you have participated. Use, additional sheet if necessary.

Name of Host Institution	Type of Project: A.Y.I., CCSS, Summer 1. In-serv.1 , Conferences, Research Partic., NSF Fellow, etc.	Date	Length in Weeks	Amount of Financial Assistance	Source of Assistance (NSF, etc.)

17.a. Which center are you applying to attend:_____

17.b. How many miles (driving distance) do you live from the center to which you are applying?_____.

18. Are you willing to attempt to implement project concepts in your school after the training?

_____Yes _____No

19. Are you willing to serve as a resource person and share results of the project with other teachers?

_____Yes _____No

20. Are you willing to attend if meetings are scheduled on Saturday mornings during the 1985-86 fall semester?

_____Yes _____No

21. Are you willing to attend if class meetings are scheduled during the evening (7-9 for example)?

_____Yes _____No

22. Are you willing to attend if class meetings are scheduled after school?

_____Yes _____No

23. Are you willing to allow observers to carry out an evaluation of the project in your classroom?

_____Yes _____No

24. Are you willing to allow other teachers and students to observe your implementation of the project activities?

_____Yes _____No

25. Recheck this entire form to be sure that you have completed every item. When this has been done, sign the following statement:

"I certify that the information given in this application is accurate and complete."

Signature_____ Date of Application_____

MATHEMATICS MINI - INSTITUTE

PARTICIPANT INFORMATION SHEET
Project Supported by Title II, Education for Economic Security Act P.L. 98-377 SEC. 207612 (C)

State Consortium Coordinator,
Boyd Holtan, West Virginia University

WV MATHEMATICS EDUCATION CONSORTIUM OF HIGHER EDUCATION INSTITUTIONS
Institute Center:
_____ Fairmont State
_____ Marshall University
_____ Logan-Williamson Area
_____ Potomac State
_____ West Liberty
_____ WV State Area
_____ Concord College

1. Name Mr. Mrs. Miss (or ___) _____ LAST _____ FIRST _____ MIDDLE Social Security Number _____

2. Residental Address _____ No. & Street Phone: _____
_____ City & State Zip Code: _____

3. School where employed _____ Principal: _____
_____ City & State Phone: _____

4. __ Male __ Female - Date of Birth __ __, 19__ (use numbers) mo. day yr.

5. Level of Employment 1985-86 Academic year. ___ Fourth Grade Teacher, ___ Fifth Grade Teacher, ___ Sixth Grade Teacher, ___ Seventh Grade Teacher, ___ Other (state) _____

6. Total number of years of teaching experience. _____

7. Number of years of teaching experience at each grade level: ___ Fourth Grade, ___ Fifth Grade, ___ Sixth Grade, ___ Seventh Grade, ___ Other (state) _____

8. Highest Degree earned: ___No degree, ___Bachelor's, ___Master's, ___Doctor's

9. Bachelor's Degree: _____ Granting Institution _____ Year _____ Major

10. Highest Degree beyond Bachelor's: _____ Granting Institution _____ Year _____ Major

11. County where employed: _____
Central Office Supervisor or Administrator: (Will be contacted for Project evaluation)
Name _____ Position _____
Address _____ Phone _____

12. a. Site Instructor for Institute Mathematics Class: _____
    b. Site Instructor for Institute Mathematics Education Class: _____
    c. Registered for Graduate Credit at:
    ___West Virginia University, ___Marshall University, ___ College of Graduate Study.

13. Check your certification status: __No Certificate, __Temporary or emergency, __Permanent or fully accredited. Certification deficiency (if any) is in: __Science or mathematics, __Education, __Both, __Other(specify)_____

14. Are you to receive financial support from your county school unit to support books, fees, or travel for this institute? If so, indicate how much and how administered (for example, stipends, purchase of books etc.)_____
    _____
    _____

15. a. From which sources did you learn about the Consortium Mathematics Mini-Institute? (More than one may be checked).

    _____ Newspaper Article
    _____ Principal told me
    _____ Principal's bulletin board
    _____ Letter from Site Coordinator
    _____ County Instructional supervisor told me
    _____ County In-Service Meeting Announcement
    _____ Institute teacher contacted me
    _____ Another teacher told me
    _____ Other (What was it?) _____

    b. Write a"1"by the source above where you received information first, and a "2"by the source which was second.

    c. Draw a circle around the source above that was most influential in helping you decide to apply for the Mathematics Mini-Institute.

MATHEMATICS MINI - INSTITUTE 1985

FINAL PARTICIPANT SURVEY FORM
Mathematics Class
Project Supported by Title
II, Education for Economic
Security Act P.L. 98-377
SEC. 207612 (C)

State Consortium Coordinator
Boyd Holtan, West Virginia University

WV MATHEMATICS EDUCATION CONSORTIUM
OF HIGHER EDUCATION INSTITUTIONS
Institute Class Location:
_____ Fairmont State College
_____ Marshall University
_____ Logan
_____ Potomac State College
_____ West Liberty State College
_____ WV State College
_____ Concord College

In this survey we wish to obtain the reaction of each class member to the activities and content of the course. Choose the one most appropriate response for each question. A separate form will be used for the mathematics education class and for the Mini-Institue.

1. How well do you understand the mathematics content which has been presented this term? I understand clearly most of the content ____; some of the content ____; little or none of the content ____.

2. Has the pace of the mathematics instructor been satisfactory this term? Very fast ____; little too fast ____; just right ____; little too slow ____; very slow ____.

3. Have you felt free to ask questions in the mathematics class? No hesitance at all ____; some hesitance ____; great hesitance ____.

4. How significant do you consider the mathematics content for you? Very worthwhile ____; of some value ____; little or no value ____.

5. To what extent has the mathematics content been "old stuff" and, consequently of little value to you? Very repetitious ____; some repetition ____; mostly new content ____.

6. In the mathematics class did you have difficulty in knowing what to read or study, or what was expected of you? I had no trouble in knowing what to do ____; some trouble ____; I was usually in the dark about what to read or do ____.

7. In the mathematics class, was the proportion of lecture and discussion-questions out of balance? Too much lecture ____; balanced about right ____; too much discussion-question ____.

8. Has your attitude and interest toward mathematics been changed in any way this term? Yes, increased ____; a bit greater ____; about the same ____; decreased some ____; not decreased ____.

9. If your attitude and interest toward mathematics has changed, what do you think is the primary reason?

10. Describe the aspects of the work during the mathematics class which you felt were <u>most</u> valuable.

11. Describe the aspects of the work during the mathematics class which you felt were <u>least</u> valuable.

12. Make a general evaluation of your experiences in the mathematics class which would be constructively useful for making this course more valuable.

MATHEMATICS MINI - INSTITUTE 1985

FINAL PARTICIPANT SURVEY FORM
Mathematics Education Class
Project Supported by Title II, Education for Economic Security Act P.L. 98-377
SEC. 207612 (C)

State Consortium Coordinator,
Boyd Holtan, West Virginia University

WV MATHEMATICS EDUCATION CONSORTIUM
OF HIGHER EDUCATION INSTITUTIONS
Institute Class Location:
____ Fairmont State College
____ Marshall University
____ Logan
____ Potomac State College
____ West Liberty State College
____ WV State College
____ Concord College

In Part I of this survey we wish to obtain the reaction of each class member to the activities and content of the MATHEMATICS EDUCATION class. Another form will be used for mathematics class. In Part II, we wish to have your observations about the Mini-Institute Program--both the mathematics and mathematics education portion of it.

Part I.

1. How well do you understand the mathematics education content which has been presented this term? I understand clearly most of the content ____; some of the content ____; little or none of the content ____.

2. Has the pace of the mathematics education instructor been satisfactory this term? Very fast ____; little too fast ____; just right ____; little too slow ____; very slow ____.

3. Have you felt free to ask questions in the mathematics education class? No hesitance at all ____; some hesitance ____; great hesitance ____.

4. How significant do you consider the mathematics education content for you? Very worthwhile ____; of some value ____; little or no value ____.

5. To what extent has the mathematics education content been "old stuff" and consequently of little value to you? Very repetitious ____; some repetition ____; mostly new content ____.

6. In the mathematics education class, did you have difficulty in knowing what to read or study, or what was expected of you? I had no trouble in knowing what to do ____; some trouble ____; I was usually in the dark about what to read or do ____.

7. In the mathematics education class, was the proportion of lecture and discussion-questions out of balance? Too much lecture ____; balanced about right ____; too much discussion-question ____.

8. Has your attitude and interest toward teaching mathematics been changed in any way this term? Yes, increased ____; a bit greater ____; about the same ____; decreated some ____; no decreased ____.

9. If your attitude and interest in mathematics education has changed, what do you think is the primary reason?

10. Describe the aspects of the work during the mathematics education class which you felt were most valuable.

11. Describe the aspects of the work during the mathematics education class which you felt were least valuable.

12. Make a general evaluation of your experiences in the mathematics education class which would be constructively useful for making this course more valuable.

Part II - Please respond to the following items as relating to the Mini-Institute as a whole--both the mathematics and mathematics education classes.

1. Was the proportion of mathematics subject matter and teaching methods subject matter out of balance? Too much mathematics ____; balanced ____; too much teaching methods ____.

2. How were your Mini-Institute classes scheduled? Week night and Saturday morning ____; Two consecutive evenings ____; Two non-consecutive evenings ____; Other: _____ Explain _____.

3. If the Mini-Institute were repeated, which of the following would you prefer? Week night and Saturday morning ____; Two consecutive evenings ____; Two non-consecutive evenings ____; Other: _____ Explain _____.

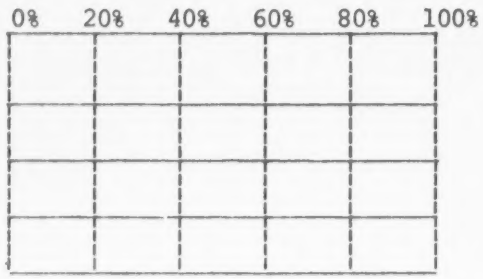
4. Number of children you are teaching mathematics.
Grade 3 ____; Grade 4 ____; Grade 5 _____; Grade 6 ____; Grade 7 ____;
Other _____; Specify _____

5. How was information and material from the Mini-Institutes used in the classes you teach? Indicate with an X for each:

	Much	Some	Little	None
a. Integrated into the usual mathematics sequence	____	____	_____	____
b. As special units scheduled at opportune times	____	____	_____	____
c. Other ways Please explain _____ _____	____	____	_____	____

6. Have you participated in any In-Service Meetings, Workshops, PTA Meetings etc., in which the Mini-Institute material was discussed or demonstrated? Yes ____; No ____; If yes, describe below, indicating the date, group, number involved, and what you did.

7. Mark an X on the horizontal line to show the percentage of the number of your students you think showed some improvement in the following areas because of your Mini-Institute experience?



a. knowledge of number facts

b. understanding of concpets

c. application of concepts

d. attitude toward math

e. other areas-Identify _____
_____.

8. Describe the aspects of the Mini-Institute which you felt were the most valuable.

9. Describe the aspects of the Mini-Institute which you felt were the least valuable.

10. What suggestions would you make for improving the Mini-Institute?

West Virginia University

Division of Education
304 293-3441/3442

College of Human Resources and Education
602-604 Allen Hall
P.O. Box 6122
Morgantown, WV 26506-6122

February 3, 1986

Some of your teachers participated in the Mathematics Mini-Institute in the Higher Education Consortium Project (PL 98-377) during the fall semester. The teacher(s) identified you as their principal so that we might contact you for the project evaluation. Your teacher participants are listed below.

The original grant proposal requires that a teacher's principal be contacted to provide evaluative information about the project. Will you please take a few minutes and respond to the enclosed questions and return it in the pre-stamped envelope? I would appreciate an early response since the evaluation and report must be completed this semester. I thank you for your attention to this and hope that the project has been of help to your teachers.

Sincerely,

Boyd Holtan
Professor of Education
Project Coordinator

BH:pcc

HIGHER EDUCATION MATHEMATICS EDUCATION CONSORTIUM
Principal Survey
Code _____

Middle grade teachers from your school participated in a mathematics and mathematics education class for 6 hours of graduate credit as part of the Education for Economic Security Act (P.L. 98-377) project, Consortium of Higher Education Institutions. The following questions are part of the project evaluation. Please answer these questions and return in the enclosed envelope upon completion of the form. Thank you, Boyd Holtan, Project Coordinator.

1. What contact related to the Mathematics Mini-Institute Program have you had with your participant teachers this school year? (Choose the one most representative of your relationship.)

   Shared and discussed material and activities with the teachers _____; briefly discussed the program with the teachers _____; aware of the program, but have not had contact with the teachers _____; no contact _____.

2. Based upon the information about the Mathematics Mini-Institute that has reached you, indicate by a check in each row the amount of assistance you believe the program has been to your teachers in each of the following areas:

	Mini-Institute Program Assistance to Participating Teachers				
	None	Some	a good amount	Much	Very Much
Mathematics content knowledge					
Methods of teaching mathematics					
Attitudes of teachers towards teaching mathematics					
Attitudes towards teaching children					
Skill in communicating with parents and principal about math teaching.					

3. Have the teachers in the Mathematics Mini-Institute shared information from the Institute with other teachers? Not that I know of _____; informally in school _____; school in-service session _____; parent-teachers meetings _____; Other _____ (Please describe briefly.)

4. One of the intentions of the Mini-Institute Proposal was that the County Administration would be encouraged to use some of the ESS 98-377 grant money to support teachers in the Mini-Institute classes, for example by purchasing the textbooks, reimbursing travel, or by stipends.

   a. Were you aware of the possibility of the County and Higher Education cooperative support of project participants? yes _____; no _____.

   b. What financial support did your county contribute to your teacher Mini-Institute participants? None _____; purchased books _____; reimbursed travel _____; paid stipend of _____ dollars; Other _____. (Describe)

5. Have you any general comments about the Consortium Mini-Institute? If so, please share them here.

West Virginia University

Division of Education
304 293-3441/3442

College of Human Resources and Education
602-604 Allen Hall
P.O. Box 6122
Morgantown, WV 26506-6122

February 3, 1986

Some of the teachers in your county participated in the Mathematics Mini-Institute in the Higher Education Consortium Project (PL 98-377) during the fall semester. The teacher(s) identified you as a central office supervisor or administrator that we might contact for project evaluation. Your teacher participants are listed below.

The original grant proposal requires that a teacher's central office administrator be contacted to provide evaluative information about the project. Will you please take a few minutes and respond to the enclosed questions and return it in the pre-stamped envelope? I would appreciate an early response since the evaluation and report must be completed this semester. I thank you for your attention to this and hope that the project has been of help to your teachers.

Sincerely,

Boyd Holtan
Professor of Education
Project Coordinator

BH:pcc

February, 1986

HIGHER EDUCATION MATHEMATICS EDUCATION CONSORTIUM
County Central Administrator Mini-Institute Survey
Code _____

Middle grade teachers from your school district participated in a mathematics and mathematics education class for 6 hours of graduate credit as part of the Education for Economic Security Act (P.L. 98-377) project, Consortium of Higher Education Institutions. The following questions are part of the project evaluation. Please answer these questions and return in the enclosed envelope upon completion of the form. Thank you, Boyd Holtan, Project Coordinator.

1. What contact with the Mathematics Mini-Institute Participants have you had this school year? (Choose the one most representative of your relationship.)

   Shared material and activities with the teachers _____; briefly discussed the program with the teachers _____; discussed the program only with the principals _____; aware of the program, but have not had contact with the teacners _____; no contact _____.

2. Based upon the information about the Mathematics Mini-Institute that has reached you, indicate by a check in each row the amount of assistance you believe the program has been to your teachers in each of the following areas:

Mini-Institute Program Assistance to Participating Teachers

	None	Some	a good amount	Much	Very Much
Mathematics content knowledge					
Methods of teaching mathematics					
Attitudes of teachers towards teaching mathematics					
Attitudes towards teaching children					
Skill in communicating with parents and principals about math teaching.					

3. Have the teachers in the Mathematics Mini-Institute shared information from the Institute with other teachers? Not that I know of _____; informally in school _____; school in-service session _____; parent-teachers meetings _____; Other _____ (Please describe briefly.)

4. One of the intentions of the Mini-Institute Proposal was that the County Administration would be encouraged to use some of the ESS 98-377 grant money to support teachers in the Mini-Institute classes, for example by purchasing the textbooks, reimbursing travel, or by stipends.

   a. Were you aware of the possibility of the County and Higher Education cooperative support of project participants? yes _____; no _____.

   b. What financial support did your county contribute to your Mini-Institute participants? None _____; purchased books _____; reimbursed travel _____; paid stipend of _____ dollars; other _____. (Describe).

5. Have you any general comments about the Consortium Mini-Institute? If so, please share them here.

Marshall University

COLLEGE OF EDUCATION

OFFICE OF THE DEAN

May 16, 1985

Dr. Boyd Holtan
604 Allen Hall
West Virginia University
Morgantown, WV 26506

Dear Dr. Holtan:

Marshall University is pleased to join a consortium of West Virginia colleges and universities in a proposal to the West Virginia Board of Regents.

This proposal is for the funding of ten centers to offer mathematics and education classes for teachers in grades four through six. Marshall University will be responsible for the courses in our area. The fiscal agent for the grant will be West Virginia University.

Marshall University will encourage a faculty member of our mathematics and education departments to work with the advisory committee of the consortium. These faculty members will be responsible for cooperating with local public schools in planning the program; attending a two day seminar in August, 1985 for curriculum development in the program, and for teaching in the program during the first semester of the 1985 - 86 school year. These faculty members time in the program will be on an overload basis and paid for from the grant (regular time may be used on a replacement basis). Travel and course expenses for teaching materials will also be paid from grant funds.

We look forward to participating in this creative effort to meet the needs of the teachers in our service region. If we can provide you with additional information, please advise me.

Sincerely,

Allen A. Mori, Dean
College of Education

Steve Hanrahan, Dean
College of Science

AAM:SH:bl

west virginia college of graduate studies
institute, wv 25112
phone (304) 768-9711

July 24, 1985

Dr. Boyd Holtan
Math Consortium Coordinator
Division of Education
West Virginia University
Morgantown, WV 26506

Dear Dr. Holtan:

Thank you for the materials that you sent on the Math Consortium. I can appreciate the magnitude of this effort and the short time that you have to put it together.

We have been in touch with West Virginia State College in terms of the local institute. Dr. Ray Dockery will be the COGS representative on the coordinating committee. Dr. Dockery will meet with you on August 23 and 24.

If I may be of any further assistance, please feel free to contact me.

Sincerely,

JACK E. YEAGER
Dean
Division of Education

JEY:cf

CC: Dr. Ray Dockery

WEST VIRGINIA STATE COLLEGE
Institute, West Virginia
25112

Office of the President

May 21, 1985

Dr. Boyd Holtan
604 Allen Hall
West Virginia University
Morgantown, WV 26506

Dear Dr. Holtan:

West Virginia State College is pleased to join a consortium of West Virginia colleges and universities in a proposal to the West Virginia Board of Regents.

This proposal is for the funding of ten centers to offer mathematics and education classes for teachers in grades four through six. West Virginia State College will be responsible for the courses in our area. The fiscal agent for the grant will be West Virginia University.

West Virginia State College will encourage a faculty member of our mathematics and education departments to work with the advisory committee of the consortium. These faculty members will be responsible for cooperating with local public schools in planning the program; attending a two-day seminar in August, 1985 for curriculum development in the program, and for teaching in the program during the first semester of the 1985-86 school year. These faculty members time in the program will be on an overload basis and paid for from the grant (regular time may be used on a replacement basis). Travel and course expenses for teaching materials will also be paid from grant funds.

Sincerely,

Thomas W. Cole, Jr.

Thomas W. Cole, Jr.
President

C/f

cc Dr. Ancella Bickley

Fairmont State College
FAIRMONT, WEST VIRGINIA 26554

VICE PRESIDENT
FOR ACADEMIC AFFAIRS

PHONE: (304) 367-4192

May 20, 1985

Dr. Boyd Holtan
604 Allen Hall
West Virginia University
Morgantown, WV 26506

Dear Dr. Holtan:

Fairmont State College is pleased to join a consortium of West Virginia colleges and universities in a proposal to the West Virginia Board of Regents.

This proposal is for the funding of ten centers to offer mathematics and education classes for teachers in grades four through six. Fairmont State College will be responsible for the courses in our area. The fiscal agent for the grant will be West Virginia University.

Fairmont State College will encourage a faculty member of our mathematics and education departments to work with the advisory committee of the consortium. This faculty member will be responsible for cooperating with local public schools in planning the program; attending a two day seminar in August, 1985 for curriculum development in the program, and for teaching in the program during the first semester of the 1985-86 school year. This faculty member's time in the program will be on an overload basis and paid for from the grant (regular time may be used on a replacement basis). Travel and course expenses for teaching materials will also be paid from grant funds.

Sincerely yours,

H. Dean Peters

ml
cc: Mrs. Laughlin
Dr. William Ruoff

Concord College
ATHENS, WEST VIRGINIA 24712 • 304/384-5115

VICE PRESIDENT AND ACADEMIC DEAN

May 16, 1985

Dr. Boyd Holtan
604-F Allen Hall
Box 6122
West Virginia University
Morgantown, WV 26506

Dear Dr. Holtan:

After due consultation with Dr. William E. Hoff, Chairperson of Concord College's Department of Mathematics, Division of Natural Sciences, Dr. Daniel W. Krider, Chairperson-Designate of the Department of Mathematics, Division of Natural Sciences, and Ms. Mary Edna Beckett, Chairperson, Division of Natural Sciences, I am pleased to report that Concord College is willing to consider the joining of a consortium of West Virginia colleges and universities in a proposal, to the West Virginia Board of Regents, pertaining to the funding of ten centers to offer mathematics and education classes for teachers in grades four through six.

As we understand the essential components of this potential proposal, Concord College's role in it, if finally approved by all participating parties, would involve responsibility for the successful offering of appropriate courses within our service region. To that end, appropriate willing faculty members in our Department of Mathematics would be assigned to work with the advisory committee of the consortium; in so doing, they would be responsible for cooperating with local public schools in planning the program, attending a two-day seminar in August, 1985 for curriculum development of the program, and for teaching in the program during the first semester of the 1985-86 academic year. Financial compensation for these faculty members would on an overload basis and paid from grant monies; travel and course expenses for teaching materials also would be paid from grant monies. West Virginia University would act as the chief fiscal agent for this consortium; Concord College would provide an appropriate faculty member from the Department of Mathematics (recommended for such service through normal channels) to serve as our liaison with West Virginia University in the execution of this grant project.

If you have any questions about the foregoing, or wish further elaboration on any aspect of it, please feel free to contact me. In the meantime, best wishes for success in bringing this idea to fruition.

Dr. Boyd Holtan
Page 2
May 16, 1985

Sincerely,

Donald R. Bronsard
Vice President and
Academic Dean

DRB/ab

cc Ms. Mary Edna Beckett, Chairperson, Division of Natural Sciences
Dr. Daniel W. Krider, Chairperson-Designate, Department of Mathematics
Dr. William E. Hoff, Chairperson, Department of Mathematics
Dr. Arthur J. Benson, Chairperson, Division of Education, Library Science, and Physical Education
Dr. Paul J. Morgan, Chairperson-Designate, Division of Education, Library Science, and Physical Education
Mr. Jack R. Grose, Business Manager
Dr. Dean W. Turner, Assistant Dean
Dr. M. N. Freeman, President

WEST LIBERTY STATE COLLEGE
WEST LIBERTY, WEST VIRGINIA 26074

OFFICE OF THE PRESIDENT

May 21, 1985

Dr. Boyd Holtan
604 Allen Hall
West Virginia University
Morgantown, WV 26506

Dear Dr. Holtan:

West Liberty State College is pleased to join a consortium of West Virginia colleges and universities in a proposal to the West Virginia Board of Regents.

This proposal is for the funding of ten centers to offer mathematics and education classes for teachers in grades four through six. West Liberty State College will be responsible for the courses in our area. The fiscal agent for the grant will be West Virginia University.

West Liberty State College will encourage a faculty member of our mathematics and education departments to work with the advisory committee of the consortium. These faculty members will be responsible for cooperating with local public schools in planning the program; attending a two day seminar in August, 1985 for curriculum development in the program, and for teaching in the program during the first semester of the 1985-86 school year. These faculty members time in the program will be on an overload basis and paid for from the grant (regular time may be used on a replacement basis). Travel and course expenses for teaching materials will also be paid from grant funds.

Sincerely,

Clyde D. Campbell

Clyde D. Campbell
President

CDC/tr

cc: Dr. Donald C. Darnton

Potomac State College

Associate Dean

Potomac State College of
West Virginia University
Keyser, West Virginia 26726
304-788-3011

July 16, 1985

Dr. Boyd Holtan
Math Education Consortium Director
Project Coordinator
604 Allen Hall, Box 6122
West Virginia University
Morgantown, WV 26506-6122

Dear Dr. Holtan:

Potomac State College is pleased to be included in the Consortium of seven higher education institutions serving as centers for the Mathematics Mini-In-Service Institutes.

The following faculty member will serve as Center Coordinator for Potomac State:

Robert W. Naylor, Ph.D
Chairperson, Division of Natural and
Physical Sciences and Mathematics
Science Hall
Potomac State College
Keyser, WV 26726

Phone: (304) 788-3011, Ext. 240 (office)
(304) 788-3021 (home) evenings

Two instructors, one for the mathematics course and one for the mathematics education course, will be identified in the near future; the College will notify you as soon as selections are made.

The following counties are in commuting distance of Potomac State College: Mineral, Hampshire, Hardy, Grant, Pendleton and Tucker. Mathematics middle school teachers in the public schools of those counties should be served.

Presently, the only county contact that has been made is with Pat Mason of the Mineral County Board of Education.

Equal Opportunity / Affirmative Action Institution

Dr. Boyd Holtan
Page 2
July 16, 1985

We look forward to participating and are hopeful that demand will warrant the course offerings.

Sincerely,

Nancy M. Hockensmith

Nancy M. Hockensmith
Associate Dean

vz

cc: James L. McBee, Jr.
Hunter J. Conrad
Robert W. Naylor

KANAWHA COUNTY SCHOOLS

200 Elizabeth Street • Charleston, West Virginia 25311-2119 • (304) 348-7770

BOARD OF EDUCATION
Rosanna C. Young, President
W. Stuart Calwell, Jr. Deatra L. Markham
Matthew M. Kinsolving Martha L. Wood

SUPERINTENDENT
David L. Acord

September 6, 1985

TO: E. V. Iannello

FROM: Douglas J. Walters
Director of Staff Development

SUBJECT: LETTER OF SUPPORT FOR MATHEMATICS GRADUATE COURSE

It is with a great deal of pleasure, as a representative of Kanawha County Schools, that I endorse and encourage the work of the higher education consortium for the EESA Grant. The mathematics courses to be taught by the consortium during the 1985-86 school year coincide with our local EESA Title II goals and objectives.

The Department of Staff Development will assist in any way it can to promote and provide access to these graduate courses for our staff. If I can be of any further assistance in this matter, please contact my office.

DJW/bp

Lincoln County Schools

238 Main Street Hamlin, WV 25523 Ph. 304-824-3033

SUPERINTENDENT
Charles S. McCann

ASST. SUPERINTENDENT
Harold R. Smith
Stephen Priestley

BOARD OF EDUCATION
Mr. George Chapman, President
Mr. Billy Joe Smith
Mr. Lawrence Barrett
Mr. Fred Curry
Mr. Bill E. Pauley

August 1, 1985

Mr. E.V. Iannello
Department of Mathematics
Mini Institute Center Coordinator
West Virginia State Cllege
Institute, WV 25112

Dear Mr. Iannell,

The Lincoln County School System is very pleased and happy to participate in the Middle School Mathematics MIni-Inservice Institute.

We have applied for an EESA Title 2 grant and may be able to help our teachers by providing for textbook purchases and/or other fees associated with the Mini-Inservice Institute.

If I can be of any further assistance, please let me know.

Sincerely,

Dan Plumley

Dan Plumley
Mathematics Supervisor

B C S Boone County Schools

69 AVENUE B
MADISON, WEST VIRGINIA 25130
(304) 369-3131

Board of Education
Dr. Michael Walker, President
Richard Browning, Vice President
Willis W. Elkins, Member
James J. MacCallum, Member
George Viars, Jr., Member

Kenneth R. Mabe, Superintendent
Cecil C. Dolin, Assistant Superintendent
Manuel P. Arvon, Assistant Superintendent

August 6, 1985

E.V. Iannello
Mathematics - Higher Education
Education Consortium
West Virginia State College
Institute, West Virginia 25112

Dear Sir:

Boone County Schools is pleased to learn two courses will be offered by your department in mathematics content and methodology during the ensuing school year. We are committed to improving teacher knowledge and skills in mathematics with the intent of enhancing classroom instruction. We will encourage our teachers to participate and we offer our assistance in promoting or implementing this project. Dr. Richard Adkins, county Math/Science Supervisor, will be in contact with you to coordinate our efforts.

Sincerely,

Kenneth R. Mabe

Kenneth R. Mabe
Superintendent

KRM/ced

Hampshire County Board Of Education

SUPERINTENDENT OF SCHOOLS
Grey M. Cassell
ASSISTANT SUPERINTENDENT
Donald R. Swiger
DIRECTOR OF INSTRUCTION/
DEPUTY SUPERINTENDENT
Samuel K. Kile
DIRECTOR OF ELEMENTARY EDUCATION
Anna Dale Volkin
DIRECTOR OF SPECIAL EDUCATION
Gerald A. Mathias
DIRECTOR OF SPECIAL PROGRAMS
David C. Trimmier
DIRECTOR OF FINANCE/TREASURER
G. Steven Peer
CURRICULUM SPECIALIST/
SECONDARY EVALUATOR
Wray D. Kimmel

46 S. HIGH STREET - ROMNEY, WEST VIRGINIA 26757
Telephones: Area Code 304....822-3528
Federal Programs Office – 822-3098

BOARD OF EDUCATION
Madeline M. Blue, President
Helen A. Heatwole
Glenn Heavner
Galen Shingleton
Eugene Tutwiler

July 24, 1985

Dr. Robert Naylor
Potomac State College
Keyser, WV 26726

Dear Dr. Naylor:

Please consider this letter as full support for the program for which you recently received funding. I feel that our teachers are in need of this type of program in the area of math.

Please be advised that we will support you in any manner that you so desire in seeing that your program will be implemented.

Thank you for the opportunity to assist you and at the same time assist our teachers.

Sincerely,

Grey M. Cassell

Grey M. Cassell

GMC:pas

Grant County Schools
OFFICE OF SUPERINTENDENT
PETERSBURG, WEST VA.
26847

July 23, 1985

Mr. Robert W. Naylor
Potomac State College
Keyser, West Virginia 26726

Dear Mr. Naylor:

This letter to express my full cooperation in the benefits that the teachers of Grant County Schools will receive by their participation in the middle school mathematics graduate classes being offered through C.O.G.S., Marhsall, and WVU.

It is my understanding that the use of the entitlement monies under P.L. 79-39[illegible] will be used to purchase textbooks, stipends, travel allowances, etc.

Again, I pledge my full support and interest in this program. Should you have any questions, please contact me.

Sincerely,

David F. Adkins

David F. Adkins
Superintendent

DFA/lh

encl

Hardy County Schools
510 Ashby Street, Moorefield, WV 26836
(304) 538-2348

July 25, 1985

John V. Miller, Jr., Superintendent
Hoy D. Dove, Jr., Asst. Supt.

Board Members:
Loring Barr, President
Ellwood May, Vice-President
Donald J. Baker, Jr.
Cecelia Turner
Vanis Halterman

Mr. Robert Naylor
Potomac State College
Keyser, West Virginia 26726

Dear Mr. Naylor:

I have reviewed the proposal for the Mathematics Mini-in-Service Institute and I would like to offer my encouragement and support with this project. I certainly will encourage our teachers to participate.

The teaching assignments at Moorefield Elementary School have not been finalized so I will not know for a few weeks who will be teaching the Mathematics there.

Sincerely,

John V. Miller, Jr.
Superintendent

JVMJR/bm

TUCKER COUNTY SCHOOLS

Dr. Roy A. Moss, Superintendent
P. O. Box 369, Parsons
West Virginia 26287
Telephone: 304-478-2771

BOARD of EDUCATION MEMBERS
Betty Knicley, President
Ronald Knotts, Vice - President
Virginia Flanagan
Truman Phillips
George Walburn

August 12, 1985

Mr. Robert Naylor
Potomac State College
Keyser, WV

Dear Mr. Naylor:

In response to our recent telephone conversations regarding the Title II project, we wish to confirm our interest in your project and offer any assistance that you may need.

We are always interested in upgrading teacher training, especially in the area of math and science, and are happy that you will be working with teachers in the math area.

Again, we will cooperate in any way within our means to support your project.

Sincerely,

Donna Carr

Donna Carr
Title II Coordinator

Pendleton County Board of Education

SUPERINTENDENT OF SCHOOLS
John F. Bowers
ASSISTANT SUPERINTENDENT
Virgil Puffenberger
DIRECTOR OF FEDERAL PROGRAMS
Elizabeth A. Leeson
SPECIAL EDUCATION COORDINATOR
R. Kenneth Price, Jr.
COORDINATOR OF CURRICULUM & INSTRUCTION
Ronald V. Whetzel

BOARD OF EDUCATION
Robert O. Adamson, President
Clinton Ann Bowers
Raymond M. Hoover, DDS
John A. Mallow, DVM
Larry D. Rexrode, R.Ph.

P.O. DRAWER 888, FRANKLIN, WEST VIRGINIA 26807
Telephones: Area Code 304 — 358-2207 and 358-7502

August 6, 1985

Mr. Bob Naylor
Potomac State College
Keyser, West Virginia 26726

Dear Mr. Naylor:

Mr. Ronald Whetzel, Coordinator of Curriculum & Instruction for Pendleton County Schools, has informed me that Potomac State College has plans to provide graduate courses in middle childhood math for professtional personnel.

I am delighted to hear this information and want you to know that Pendleton County will cooperate in any way possible to help make these courses successful.

If I can be of any service or assistance to you in any way please do not hesitate to contact me.

Sincerely Yours,

John F. Bowers

John F. Bowers, Superintendent
Pendleton County Schools

JFB:djp

Logan County Schools

Dr. Sam P. Sentelle, Superintendent
Box 477, East Stratton Street
Logan, West Virginia 25601
(304) 752-1550

September 11, 1985

Dr. Carl S. Johnson
Division of Teacher Education
Marshall University
Huntington, West Virginia 25701

Dear Sir:

It is with great pleasure that I confirm Logan County's participation in the Middle Mathematics Institute.

Thank you,

Sam Sentelle

SS:mb

Logan County Board of Education

James J. Barber, President · Janet Doss · Bob Gilliam
J. Naaman Godby · Kenneth Zigmond

Cabell County Public Schools

P.O. Box 446 • 620 20th Street • Huntington, West Virginia 25709 • Phone (304) 526-9800

SUPERINTENDENT
Robert L. Frum

September 9, 1985

Dr. Carl Johnson
Department of Elementary Education
Jenkins Hall
Marshall University
Huntington, WV 25703

Dear Dr. Johnson:

This is to confirm that Cabell County Public Schools will participate in the Middle School Mathematics Institute that will be held at Marshall University this fall.

Sincerely,

Robert V. Griffis
Assistant Superintendent -
Instruction

RVG:lc

WAYNE COUNTY BOARD OF EDUCATION
P.O. BOX 70
WAYNE, WEST VIRGINIA 25570-0070

M. JOE NOLAN
SUPERINTENDENT

TELEPHONE 304/272-5116
TELEPHONE 304/525-3891

August 26, 1985

Dr. Carl S. Johnson
113 Jenkins Hall
Marshall University
Huntington, WV 25701

Dear Dr. Johnson:

In reference to your letter of August 12, 1985, regarding the participation of Wayne County in the Marshall University Middle School Mathematics Institute to be held this fall, let me assure you that we do plan to participate in the institute and will be happy to assist you in any way possible.

Yours truly,

M. Joe Nolan, Superintendent

MJN:ib

OFFICERS

JAMES MELMIGE, JR.
Superintendent
EVERETT CONN
Assistant Superintendent
MITCHEL CHAPMAN
Assistant Superintendent
OLA MAE NOEL
Assistant Superintendent
W. L. BOSTIC
Administrative Assistant
WILLIAM D. DUTY
Treasurer
JOHNNY W. FULLEN
Personnel

The Board of Education of the County of Mingo
Williamson, West Virginia 25661

BOARD OF EDUCATION

PRESIDENT
LARRY HAMRICK
Williamson, W. Va.
JOE E. HATFIELD
Gilbert, W. Va.
TOM MARCUM
Dingess, W. Va.
PAUL SIZEMORE
Delbarton, W. Va.
ROBERT L. SIMPKINS
Matewan, W. Va.

August 21, 1985

Dr. Carl Johnson
Department of Curriculum and Foundations
Marshall University
Huntington, West Virginia 25701

Dear Dr. Johnson:

Mingo County chooses to fully participate in the Middle School Mathematics Mini-Institute. A list of our recommendations for selection to the institute is enclosed.

Your interest and that of Marshall University in this venture is much appreciated.

Yours truly,

Jack E. Phillips

Jack E. Phillips,
Secondary Supervisor

Lincoln County Schools

238 Main Street Hamlin, WV 25523 Ph. 304-824-3033

SUPERINTENDENT
Charles S. McCann

ASST. SUPERINTENDENT
Harold R. Smith
Stephen Priestley

BOARD OF EDUCATION
Mr. George Chapman, President
Mr. Billy Joe Smith
Mr. Lawrence Barrett
Mr. Fred Curry
Mr. Bill E. Pauley

August 1, 1985

Dr. Carl S. Johnson
Professor of Teachers Education
113 Jenkins Hall
Marshall University
Huntington, WV 25701

Dear Dr. Johnson,

The Lincoln County School System is very pleased and happy to participate in the Middle School Mathematics Mini-Inservice Institute.

We have applied for an EESA Title 2 grant and may be able to help our teachers by providing for textbook purchases and/or other fees associated with the Mini-Inservice Institute.

If I can be of any further assistance, please let me know.

Sincerely

Dan Plumley

Dan Plumley
Mathematics Supervisor

MASON COUNTY SCHOOLS
TELEPHONE 675-4540
EIGHTH STREET
POINT PLEASANT, WEST VIRGINIA

August 15, 1985

Carl S. Johnson
Marshall University
Dept. of Curriculum & Foundations
Huntington, WV 25701

Dear Mr. Johnson,

Mason County has agreed to work collaboratively with Marshall University and RESA II in the development and implementation of the Mathematics Mini-In-Service Institute. A portion of Mason Countys Title II allocation will be utilized to provide support to county participants.

Sincerely,

Carol S. Miller
Director of EESA Title II

CSM/b

BOARD OF EDUCATION
Joseph P. Talerico, President
Thomas S. Clark
Stacy L. Groscup
Clarence Harvey, Jr.
Frank S. Marino, Jr.

MONONGALIA COUNTY SCHOOLS

THE BOARD OF EDUCATION OF THE COUNTY OF MONONGALIA * SEAL - WEST VIRGINIA

SUPERINTENDENT
Dr. Jack C. Dulaney

263 Prairie Avenue, Morgantown, WV 26505 Ph. 304-292-6371

May 21, 1985

Dr. Boyd Holtan
Department of Curriculum and Instruction
604 Allen Hall
West Virginia University
Evansdale Campus
Morgantown, WV 26506

Dear Dr. Holtan:

Please accept this letter of support for your proposal to provide inservice training for Teachers of Mathematics in grades 4-6.

I understand that this plan is pursuant to Pub. Law 98-377. Moreover, we plan to encourage teacher participation with limited financial support for their expenses.

If I can be of any further assistance, don't hesitate to contact me.

Sincerely,

Jenifer Snider

Jenifer Snider, Director
Division of General Education

:ae

COUNTY: Wyoming

DATE: August 22, 1985

I do X /do not _____ plan to encourage middle school teachers in my county to participate in the Middle School Mathematics Institute to be held at Concord College.

Signature of Superintendent:

(This form was also completed and returned by the superintendents in Mercer, Summers, Greenbrier, and Monroe Counties.)